U.S. ARMY TRANSPORTATION

IN THE

EUROPEAN THEATER OF OPERATIONS

1942-1945

This Monograph
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INTRODUCTION

Because of the close interrelationship of strategy and logistics, and because of the size and the importance of the western European campaign, students of military affairs will long find it profitable to search out sources of information on the significance of transportation to the United States Army in invading France and cracking the renowned Siegfried Line. The present monograph can be considered only a preliminary study of the role of transportation and the work of the Transportation Corps in building up American personnel and materiel strength in the British Isles, mounting the United States forces for the amphibious assaults on Normandy and southern France, and supporting the Allied advance into the heart of Germany. The monograph was prepared during a period of several months prior to July 1946, when an increasing amount of primary and secondary historical material was becoming available in the War Department

The basic material for the monograph was obtained from the admirable and extensive quarterly historical reports and the statistical data prepared by officers of the Transportation Corps in the European Theater of Operations. These reports contain some inaccuracies and, occasionally, some contradictory information, but they provide a mine of narrative and documentary information, coupled with extensive photographs, charts and diagrams. The statistical data, particularly the monthly progress reports, also are rich in material essential to studies of U.S. transportation activities in the British Isles and on the Continent. The data, however, includes figures which cannot always be satisfactorily

reconciled.

Additional sources have been the excellent Reports of the General Board, USFET. These reports are studies prepared in Europe after the campaign had been successfully terminated, in order to draw lessons of military importance while theater documents were readily available, and the memories of military leaders could be tapped before events grew dim or were forgotten. Some of these reports also drew on the views of the War Department. The theater Transportation Corps headquarters prepared an extensive and useful Consolidated Operational Report on Transportation Corps Activities in the European Theater of Operations, as well as special studies of its operating units such as the Movements Division and the Motor Transport Service. Unfortunately, several of the General Board Reports and the Transportation Corps headquarters studies reached the War Department too late to be carefully sifted in preparing this monograph.

Publications of other historical units in the European Theater and of the Historical Division, Special Staff, War Department, also have been drawn upon for pertinent information. The official reports of the Supreme Allied Commander, General Dwight D. Eisenhower, and the War Department Chief of Staff, General George C. Marshall, have provided significant and helpful background material. The files of the Office of the Chief of Transportation, Army Service Forces, including those of the wartime Chief of Transportation, Major General C.P. Gross, and several of the Divisions of his Office, have been made available to the author of this monograph. Interviews with Transportation Corps officers returning to Washington from the European and the North African

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I. COMMENCING T.C. OPERATIONS IN THE BRITISH ISLES[1]

Among the significant factors which characterized American participation in the defeat of the German Army during World War II, was the ability to procure an adequate number of troops and supporting supplies and equipment from the hastily mobilized resources of the United States There also was the Allied capacity to move these troops and this war materiel to Europe — a factor which called for staggering amounts of ocean shipping and the safe conduct of vessels through Atlantic shipping lanes subject to patrol by Nazi submarine "wolf-packs". Furthermore, there was the fortunate existence of a large base, the United Kingdom, where shipments of U.S. troops and cargo could be received in anticipation of mounting a powerful amphibious striking force, and where the buildup of readily available reinforcements and reserve stocks could be effected.

An account of the procurement of U.S. troops and supplies lies outside the scope of this monograph, but the shipping factor and the employment of the U.K. as a base are either important elements of transportation, or elements which so closely affect transportation activities that they invite elaboration. During the first four years of the war in Europe, that is from September 1939 to September 1943, Axis attacks on Allied shipping resulted in an overall tonnage loss that was greater than the amount of new ships constructed.[2] After September 1943, how-

[1] The initials "T.C." stand for the Transportation Corps, which was activated in the U.S. on 31 July 1942. The T.C. was the successor of the Transportation Service, Service of Supply, which was activated on 9 March 1942. Although this monograph generally distinguishes between the two titles, occasionally the better known "T.C." is employed without strict adherence to chronology.

[2] History of Convoys Enroute, prepared by Hqs., Commander-in-Chief, U.S. Fleet and Commander, Tenth Fleet, Navy Dept., 1939-1945, p. 2.

ever, the rate of new construction enabled the buildup of a larger amount of tonnage than had existed in the Allied shipping pool in 1939, and the ever increasing number of available vessels permitted a notable spurt in shipments of U.S. cargo and troops to Europe and other campaign areas. Consequently, by 1 May 1945, it had become possible to deliver 4,162,070 troops and approximately 44,000,000 measurement tons of U.S. Army cargo to European ports.[3]

This remarkable record stands as a tribute to the Allied shipbuilding industry because of its output, and to the Allied Navies and Air Forces because of their successful efforts to neutralize the Nazi submarine campaign. It also reflects credit on the U.S. Army's ability in a relatively brief period to load efficiently in America, and discharge and distribute appropriately in Europe, its share of the troops and supplies necessary to defeat the stronger partner of the European Axis. The extent of the shipping accomplishment is indicated by comparison with World War I, when 2,092,277 American troops and an estimated 8,883,297 measurement tons of U.S. Army cargo were dispatched from U.S. ports to all overseas theaters.[4]

Despite the shortage of shipping which had accompanied American entry into the war, in January 1942 the U.S. began what proved to be a long drawn-out task of building up its military strength in the British Isles in preparation for a cross-Channel invasion of the Continent.

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[3] T.C. Monthly Progress Report, Statistics Branch, OCT, Comzone, ETOUSA, 30 June 1945.

[4] Comparative Data, World War I - World War II, prepared by OCT, ASF, July 1943. The figure for troops embarked during World War I embraces the movement of personnel to Europe only, a record of embarkations to other areas, if any, not being available.

The buildup p iod became arte nitial decision to undertake the invasion in September 1942 was later revised in favor of a prior commitment to a campaign in North Africa. The date for a cross-Channel assault was postponed, ultimately until June 1944, partly because there was not a sufficient number of available Allied vessels to meet simultaneously the shipping requirements of the various theaters of operation.

Even after September 1943 when the Allied shipping pool began to increase and Allied plans called for concentration on the buildup of American military strength in preparation for the Continental invasion, meeting the demands of other theaters occasionally took precedence over shipments to the United Kingdom. Nevertheless, from a negligible amount in the summer of 1943, monthly receipts of U.S. Army cargo in the U.K. rose to a peak of 1,482,294 measurement tons during May 1944, bringing the total receipts at the end of that month to slightly more than 14,000,000 measurement tons. Similarly, the number of U.S. troop arrivals at the same destination increased from practically zero during April 1943 to a peak monthly figure of 216,700 during April 1944. By the following 1 June a cumulative total of slightly more than 1,670,000 American troops had debarked in the British Isles.

A fortunate result of the lengthy buildup period was that it permitted the development of an experienced U.S. Army Transportation Corps organization in the British Isles. While functioning with the British military and civilian transportation agencies during a period of two years, the Transportation Corps unit worked out satisfactory shipping procedures for the heavy flow of cargo from the U.S., and appropriate

methods of distributing incoming troops and cargo respectively to camps and storage depots. Furthermore, by participating in outloading the assault and follow-up forces for the North African campaign, which began 8 November 1942, the Transportation Corps unit in Great Britain gained valuable experience for the task of outloading the much larger American Normandy assault and follow-up force of 1944. In other words, time and experience permitted the T.C. to accomplish a more orderly buildup of U.S. Army strength in the U.K. and to assist in mounting the Continental assault force in 1944 with much greater efficiency than it could have effected either in 1942 or in 1943. This buildup period will now be examined in greater detail.

Commencing the U.S. Army Buildup in the U.K.

During World War I the British Isles had played a subordinate role in U.S. shipments to Europe, because from the time of the American entry in 1917, French ports, railways, roads, camps and depots were available for the distribution, storage and quartering of American troops and cargo. The British Isles were used chiefly as a transfer point for American troops, who were held for only a few hours, or at the most a few days upon arrival in England, before being transferred to cross-Channel vessels. Encampment facilities were provided in only two large staging areas, one at Winchester with a capacity for 20,000 men, and one at the racetrack at Liverpool with a capacity for 20,000 men.[5] Only a relatively small staff of U.S. Army men was then required in the U.K. as shown by the fact that only from 6 to 10 officers and 10 enlisted men

[5] Memo to Brig.Gen. T.H. Dillon from Col. F.M. Franklin, 6 May 1942.

were stationed at Liverpool. [illegible]tachments were stationed in the Bristol Channel ports, and at Glasgow, Hull and Dover. This auxiliary role of the British Isles and the smallness of the U.S. Army detachments stationed there during World War I, stand in striking contrast to World War II, for on 1 June 1944 there were 1,526,964 U.S. troops in the U.K., of which 462,865 were service troops, and 18 general depots, 10 replacement depots, numerous storage depots for the various technical services and the Air Forces, salvage centers, cemeteries, POW inclosures, training centers, and a variety of other installations.[6]

American reliance on the British Isles as a base during World War II began when the first personnel shipment, consisting of 4,058 American troops, arrived in North Ireland on 26 January 1942. This shipment was intended primarily to assist in the protection of the U.K., but it also was to pave the way for future American activities in Europe. The defenses of the British Isles had been seriously weakened by the dispatch of large numbers of British troops to the Middle and Far East.

In so far as this first shipment was to prepare for future activities in Europe, it was based on strategic considerations which held that the German forces must be defeated prior to an all-out assault against the Japanese.[7] The strategy to be followed in Europe was the result of a debate during the latter part of December 1941 and the early part of January 1942, as to whether or not an initial Allied attack should be

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6 Service of Supply, ETOUSA, Installations and Operating Personnel in the U.K., Section II, 30 June 1944.

7 Report: "Data Prepared by the Operations Division", War Department General Staff, undated and unsigned. Copy #7 in files of Maj.Gen. C.P. Gross, Chief of Transportation, ASF. Received in Maj.Gen. Gross' office, 15 July 1942.

launched in western Europe or in North Africa. As General G.C. Marshall has explained in his 1941-1943 Biennial Report to the Secretary of War, the lack of available shipping and assault craft at that time, led to the decision to abandon consideration of an attack on North Africa and to concentrate on preparations for the invasion of western Europe.

Preparations for a buildup of U.S. troops in the U.K. during the initial months of 1942 were temporarily suspended, however, because of a Japanese threat to Australia, requiring the prompt dispatch of reinforcements to General Douglas MacArthur in the Southwest Pacific. All available personnel ships in the Atlantic were hurriedly shifted to carry reinforcements in the Pacific. Consequently, not until May 1942 was it possible to commence heavy shipments of U.S. troops and cargo to the U.K.

Meanwhile, planning for the invasion of Europe was pushed in both the U.S. and the U.K. The first tentative invasion plan was completed at the London planning Headquarters by 30 May.[8] It was revised on 25 June, and then when during July the Allied decision was made to launch an attack on North Africa during the fall of 1942, another revision of the cross-Channel invasion plans became necessary. Looking ahead, it might be noted that the third plan was adopted during November 1942, and this in turn was revised in the following year.

During April 1942 prospects of heavy shipments of U.S. Army cargo appear to have prompted a request from the British Staff Mission in the U.S. for the assignment of a representative from the Office of the Chief

[8] Torch - Its Relation With the ETO, Monograph prepared by Capt. M. Yarmon, Historical Unit, Headquarters, ETO, 1945. Copy in files of Historical Unit, OCT, ASF, Wash., D.C.

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In response, on 24 April the ...rtment se... l F.S. Ross to serve as the liaison officer. ...is orders were ...d only two ...ys before he was scheduled to fill a ...osition as com... a tank regiment in the 10th Armored ...sion. ...owever, C... ...oss was well qualified for his more recent assignment, for he had closely st...ied military transportation, had obtained considerable experience in the civilian railroad field, and had served as a staff officer under Colonel C.P. Gross, Chief of Transportation Division, G-4, General Staff.[10]

Before Colonel Ross departed, Major General J.C.H. Lee was appointed to head a U.S. supply mission to the British Isles, and was instructed to set up a Service of Supply organization similar to that in the War Department. Major General Lee selected a number of officers to head his general and technical staff sections, and his entire party, including Colonel Ross who was to serve as Chief of Transportation, departed for the U.K. during May.

While in the U.S. Colonel Ross worked out the initial plans for his transportation organization in accordance with his belief that men experienced in various forms of transportation, such as shipping, railroads and highway operations, should be commissioned in the Army and

9 Draft of a cable addressed to Maj.Gen. J.E. Chaney, USFOR, London, from Lt.Gen. G.C. Marshall (no day given), Apr. 1942. Another document states that on or about 15 April 1942, Major General Chaney requested Transportation Service personnel for liaison with the British, and on the basis of this request Col. Ross was selected to head a group of such personnel. Memo to C.C. Wardlow from Col. C.C. Cavendar, 23 Sept. 1942.

10 Army Transportation Journal, "Ross of ETO" by T/5 Irwin Ross, Apr. 1945.

appointed to a position suited to their particular experience.[11] In order to make such a staff function smoothly, Colonel Ross endeavored to place an Army officer in juxtaposition to each commissioned civilian. Initially, his staff consisted of an Operations, a Planning and Liaison and an Administrative section, for which he selected certain key personnel before leaving the U.S. Other staff members, particularly transportation specialists, were secured after his party reached the U.K., from among representatives of American business firms operating in Europe.

In one respect it was fortunate that Colonel Ross had received a free hand in planning the organization he headed, because he believed that it was essential to centralize control of all forms of transportation operating in a communications zone. For a time, he was assured of authority over inland waterway, port, rail, motor transport, and pipeline operations as well as preparations for mounting amphibious assault forces,[12] but as will be explained, some of these fields later were divorced from his jurisdiction either temporarily or permanently.

It might have been possible to continue centralized control of transportation activities if War Department regulations had authorized it, but when the U.S. entered the war, the current manual dealing with theater organization (FM 100-10), provided for decentralization. The manual assigned some transportation functions to the Engineers, some to the Quartermaster, some to an Air Transport Command and some to a Motor Transport Service attached to the commander of the communications zone. Issued on

[11] The Story of Transportation in the U.K., May 1942-Sept. 1943, pp. 7ff. Certain copies of this volume are labelled "Supplementary History of the T.C. in the ETO, 1942-1943."

[12] Personal letter to Maj.Gen. C.P. Gross from Col. F.S. Ross, 25 Aug. 1942.

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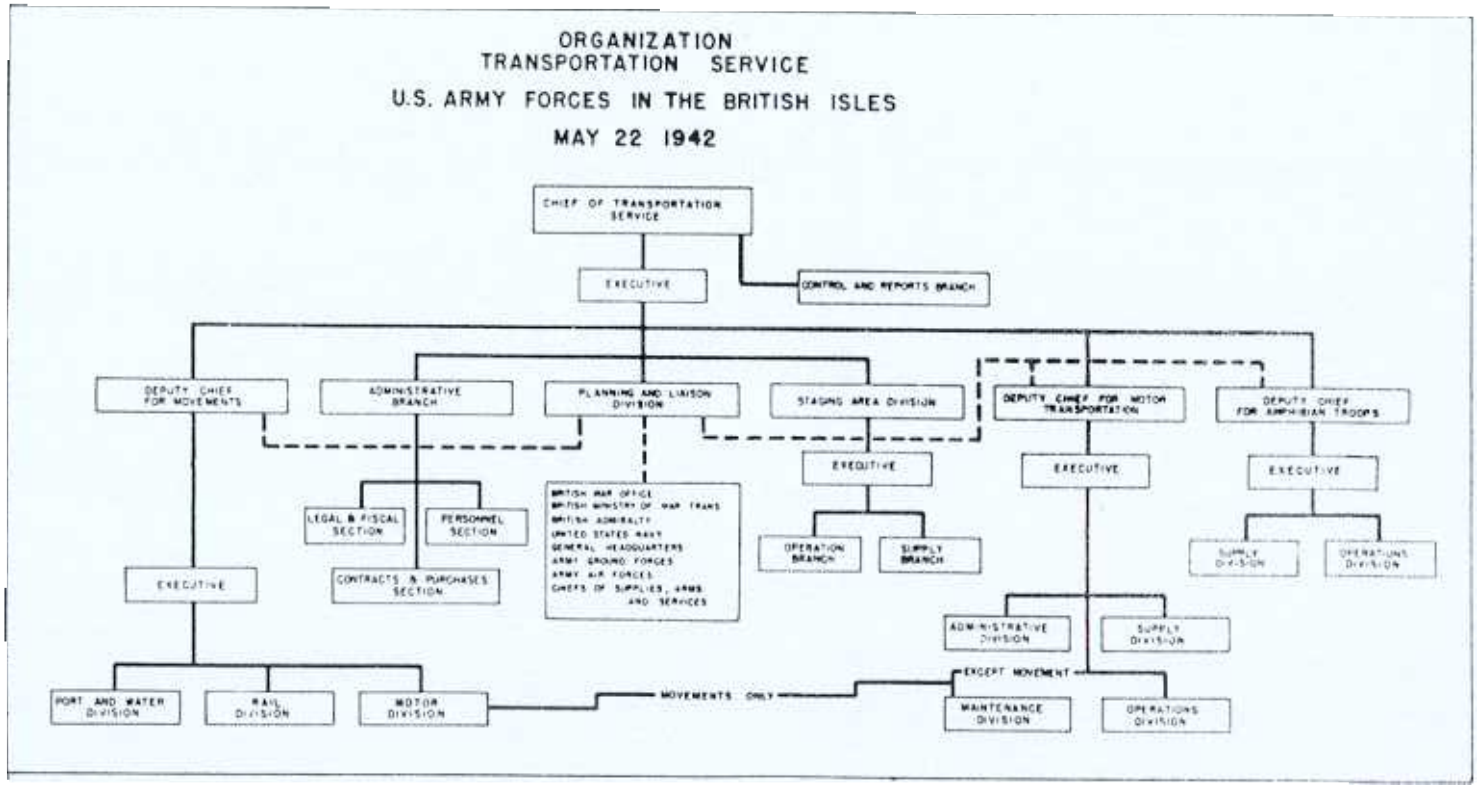

9 December 1940; the manual necessarily did not include reference to the Transportation Service (the predecessor of the Transportation Corps), which was not established until 9 March 1942. Furthermore, the manual was not revised to provide either a measure of centralized control or recognition of the T.C. until 16 October 1943.

While Major General Lee's small staff was becoming acquainted with the problems it would face in the U.K., the Service of Supply in the U.S. was rushing preparations for the shipment of men and materiel to effect the buildup of American strength in the U.K. The buildup was carried on under the code name "Bolero", and according to the preliminary planning of the first week in May, preparations were to provide for an invasion of the Continent on a six-division front during September 1942.[13] It was recognized, however, that the troop strength required for the invasion would depend largely upon developments on the eastern German front during the summer of 1942. If the Russian Army held out, and the U.S.-British assault was successful in maintaining a foothold on the Continent, by the following April (1943), the Allies would seek to enlarge their foothold with heavy reinforcements. The plan called for placing 1,000,000 U.S. troops in Europe by April 1943, and another 1,000,000 men by the end of that year.

American officials understood that a preinvasion buildup would place a great strain on the British railroads. In view of Great Britain's need for additional railway rolling stock and locomotives in the previous war, and the burdens already placed on her transportation facilities during World War II, it was foreseen that a considerable amount of assistance

13 Minutes, SOS Staff Conference, Washington, 7 May 1942.

from the U.S. in the form of rolling stock and railroad troops would be required. American conclusions along these lines were furthered by a visit of Lt. General Brehon Somervell to the U.K. during the latter part of May, as well as through studies undertaken by representatives of the Chief of Engineers, SOS, and Major General Lee's staff.

Upon his return to the U.S. Lt. General Somervell reported that he had found three outstanding difficulties to be overcome in the U.K.[14] The greatest difficulty, he asserted, concerned transportation. There was certain to be a shortage of labor for unloading ships and for loading cargo on railroad cars for distribution within the British Isles. He instructed the Chief of Transportation, SOS, Brigadier General C.P. Gross, to prepare port battalions for dispatch to the U.K. at the earliest possible date. The second problem concerned the assembly, servicing and distribution to destination of trucks which would be shipped from the U.S. in a knocked-down condition. Finally, there was a large construction program, necessitating the early shipment of construction troops and equipment, for building airfields from which to launch assaults on the Continent. The program would require an estimated 90,000 to 200,000 laborers in building airports needed by the American forces. Parenthetically, it should be noted that Lt. General Somervell studied requirements for other types of transportation assistance (such as the amount of small boat equipment, unloading gear, landing craft and railroad equipment) which the U.S. would be called on to furnish the British government.[15]

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14 Ibid, 9 June 1942.

15 Memo to Lt.Gen. B. Somervell from Brig.Gen. C.P. Gross, 16 May 1942; and SOS Conference Meeting Minutes, 9 June 1942.

Army authorities in the U.S. also struggled with the problem of securing the shipping necessary to implement a fluctuating Bolero program, and the related problem of reception capacities in the U.K. On 12 May the Chief of Transportation, SOS, estimated that there would be a surplus of available cargo vessels over and above the number required for the transportation and maintenance of U.S. troops destined for the U.K., in the following amounts: June - 18 ships; for July - 46 ships; for August - 36 ships.[16] Lt. General Somervell inquired of the British whether or not they could handle cargo from these vessels in addition to the cargo they had already agreed to receive. He also endeavored to secure an earlier loan of British transport ships than had been previously agreed upon. The records available to the author of this monograph do not reveal the outcome of these inquiries, although on 9 June Lt. General Somervell reported that the question of British transports was still under discussion.

In any case, schedules for both troop and cargo sailings were subject to periodic revision during the summer of 1942. During the latter part of June an earlier schedule for troop shipments to the U.K. was revised in the expectation of embarking 15,000 U.S. troops in July, 56,600 in August and 52,000 in September.[17] At the same time the cargo shipments schedule was revised to 128 vessels sailing during July and 89 during August. This revision also was subjected to change, as reflected in the following tabulation of ship arrivals from the U.S., troops de-

16 Ibid, 14 May 1942; and memo to Lt.Gen. B. Somervell cited in preceding footnote.

17 Cable to C.G., USFOR, London (SPTSO/453 - 20 June 1942) from Lt.Gen. B. Somervell.

barked and carg dis arg e first nine months of 1942:[18]

Month	Ship Arrivals[19] From the U.S.	U.S. Army Troop Debarkations	U.S. Army Cargo Discharged (long tons)
January 1942	2	4,058	108
February	3	—	9,222
March	8	7,904	11,707
April	2	—	5,078
May	16	24,682	46,353
June	16	19,446	33,720
July	20	26,149	75,791
August	67	73,869	186,262
September	93	28,809	239,237

Establishing the T.C. in the British Isles

It has been remarked that Colonel Ross and his staff had to learn the hard way how best to fulfill their assignment in the British Isles.[20] Not only in regard to the type of their organization but in becoming adjusted to the British military and wartime transportation agencies, U.S. Army transportation personnel had to plow new fields. These British agencies may be divided into two groups, military and civilian.[21]

The civilian group was headed by the Ministry of War Transport (MWT), the duties of which corresponded roughly to those of the American War Shipping Administration, although they also extended into the field of land transportation. Subordinate to the MWT was a Sea Trans-

18 Progress Report prepared by Statistics Branch, T.C., SOS, ETOUSA, 15 Oct. 1942.

19 This tabulation is only approximately correct as to months, because the tabulation originally was prepared weekly. Furthermore, it includes only ships carrying 500 or more troops and 1,000 or more long tons of U.S. Army cargo. The totals of all ships arriving in the U.K. with U.S. Army troops or cargo were: May - 32; June - 60; July - 76; August - 97; September - 165.

20 The Story of Transportation in the U.K., p. 70.

21 History of the T.C. in the ETO, Vol. I, pp. 6-7.

port Service, commonly referred to as "Sea Transport". The latter agency was staffed with British Naval officers, and exercised control over all shipping to and from the British Isles, and all port operations. The MWT also had established a Diversion Committee which met frequently in London, a week or ten days before the expected arrival of all incoming vessels, and allocated each to the port most capable of handling its cargo or passengers.

Broadly speaking, the principal British Army transportation agencies consisted of a general staff unit, the Movements Branch of the Office of the Quartermaster General (the Branch exercised movement control through Movement Control personnel), and the Transportation Services, which was a unit of the Royal Engineers.[22] These two agencies were headed respectively by a Director of Movements and a Director of Transportation, who controlled all types of Army movements and the operation of military transportation facilities. In other words, in contrast to the essential unity provided for by the U.S. Army Transportation Corps (after control of the Military Railway Service was transferred to the T.C. from the Corps of Engineers in November 1942), the British relied on two organizations. As an additional factor, the Royal Air Force operated a Movement agency of its own, technically in close liaison with the British Army Movements agency.

Because during the war civilian personnel continued to operate at

22 Memo to the A/COT for Operations, ASF, from Maj. D.L. Haviland, Transportation Branch, British Army Staff, Wash., D.C., 18 Oct. 1943; and Memo to OCT, ASF, from Capt. C.R. DeArman, 16 May 1945. Line of communication trucking was the province of the Royal Army Service Corps, functioning under the OQMG. In the field the Movements and Transportation Services generally were placed under a Movements and Transportation Officer, responsible to a Deputy QMG.

British ports and on Brit[illegible]e Director of Transportation did not have to assign British troops to them, nor was he directly concerned with such facilities in the British Isles. Hence his contacts with the T.C. were not extensive. Incidentally, the situation on the Continent after June 1944 was different, although generally speaking, even there the American and the British Armies operated transportation facilities independently of each other in given areas, and therefore continued to have little direct contact.

The British Movements agency, however, and the T.C. had to establish a close working relationship. The experience of the retreat from Dunkirk had taught the British Army the value of controlling all military movements in order to prevent bottlenecks and insure rapid and efficient movement of cargo and personnel. From this experience arose the creation of the Movements Control staff which had vital work to perform on the "tight little Isle", particularly as large quantities of American cargo and large movements of American troops taxed the transportation facilities.

The Director of Movements' staff operated on a decentralized basis through Movement Control officers established in each of the seven military Commands into which Britain was divided. The Commands, in turn, were divided into Districts, also containing Movement Control officers, who relied heavily on Rail (and Road) Traffic Officers (RTOs) stationed at all principal shipping points. Perhaps it should be added that the control of railway operations, as distinct from railway movements in Great Britain, was exercised through a Central Executive Board under the MWT.

It was into this transportation setup that Colonel Ross and the initial contingent of U.S. Transportation Service troops stepped in May 1942. Colonel Ross established the Transportation Service headquarters in London near the SOS headquarters, and, as will be more fully explained below, he shortly began detailing Transportation Service units and personnel to assignments with the British Movements organization and Sea Transport in areas where the handling of incoming American personnel and cargo was important. In this way, Transportation Service troops could best learn the workings of the British system.

The character of these assignments, and in fact the future of the Transportation Service, became one of the first problems that Colonel Ross faced in the British Isles. Officials of the British Army believed that American Transportation Service personnel should be appropriately incorporated in the existing Movements and Sea Transport agencies, but Colonel Ross' orders as well as his convictions forbade such a step.[23] It was then suggested that the U.S. develop its own transportation organization, handling all of its own movements. This method would bring about complete unity of command under the SOS, but it also would mean the existence of two organizations both performing the same type of work and both making demands on British railroads and shipping facilities.

Since the demands of separate British and American agencies would be likely to conflict with each other, resulting in a great deal of wasted time, Major General Lee recommended that joint control be estab-

[23] The Story of Transportation in the U.K., pp. 15ff. Colonel Ross stated that since the bulk of his organization would eventually be transferred to the Continent, where it would have to control movements on exclusively American lines of communication, he desired to prepare the T.C. for functioning independently there.

lished, so that th would iven ithority to handle American movements, with o a minimum of control by the British By the time the plan was proposed the British Isles were receiving such quantities of American goods and personnel that British officers, with Transportation Service personnel operating alongside them in the capacity of assistants and students, could no longer handle all moves. Consequently, the British accepted Major General Lee's suggestion, and thus the integral character of the OCOT was assured.

About two months after the Chief of Transportation had established headquarters in London, the entire SOS organization was moved to Cheltenham in the Midlands district.[24] This move soon required a revision in the Transportation Service headquarters organization. It could not operate without the cooperation and information furnished by the various U.S. supply services, and, equally important, it required liaison with the British headquarters in London. Therefore, Colonel Ross divided his staff, leaving the Administrative Division at Cheltenham and moving the Operations and Planning and Liaison Divisions back to London. Maintenance of two headquarters involved much duplication of work, and since both headquarters were short of personnel, the resulting difficulty was resolved eventually by transferring nearly all the transportation staff headquarters back to London, leaving at Cheltenham only a small group to insure the proper disposition of freight and to handle the dissemination

[24] Ibid, p. 11. Incidentally, the European Theater of Operations, U.S. Army (ETOUSA), was established 8 June 1942, succeeding the U.S. Armed Forces in the British Isles.

of pertinent information from the other supply services.[25]

Initial Plans for Cross-Channel Operations

While working out initial problems of establishing an American transportation staff in the British Isles and assigning transportation personnel to assist the British in handling American troops and cargo, the Chief of Transportation participated in planning for future operations. The first tentative plan drawn up in the theater was dated 30 May 1942, and as previously stated, an official plan was completed on 25 June. This plan dealt both with projected operations on the Continent, then carried on under the code name of Roundup, and the American buildup in the British Isles (Bolero). The Bolero plan of the theater Service of Supply was revised on 6 July. Although this plan was abandoned when strategic considerations fostered the decision for an Allied assault on the North African coast in the fall of 1942, for purposes of comparison with later plans for a cross-Channel assault, and as an indication of the difficulties that would have had to be surmounted for undertaking an invasion of Europe in September 1942, the transportation annex to the 6 July plan may be briefly summarized.

The transportation annex was prepared in the Office of the Chief of Transportation (OCOT). It stated that during the initial Bolero period, British transportation agencies and facilities would be utilized for the

25 Another problem for the OCOT was the transfer of the U.S. Military Railway Service from the Corps of Engineers. Since this transfer did not occur until 16 November 1942, it did not affect OCOT preparations for Roundup or for Torch (the code name for the attack on North Africa).

reception and distribution of U.S. supplies and personnel.[26] However, U.S. transportation personnel would be introduced and trained for short periods, thus affording assistance to British agencies wherever required. In particular, British port labor and equipment would be supplemented by such American equipment and port battalions as necessary. On the other hand, no U.S. railway troops were to operate British railways, other than those at U.S. depots.

The plan also contemplated receiving ultimately in the U.K. as many as 120 U.S. Army cargo vessels a month. It recognized that the shortage of certain types of port equipment in the U.K., together with the fact that some harbors were unable to receive the larger vessels, might make impractical the assignment of an entire British port to the U.S. forces. Consequently, sufficient berthing space was to be allotted to meet American shipping requirements in any one of a score of British ports. Incoming U.S. ships would be allocated to the port which would be best able to handle them, in the light of the destination of their cargo.[27]

The plan noted that vehicles already were being shipped automatically from the U.S. on the basis of tables of organization of troop units scheduled for assignment to the theater. Furthermore, provision had been made for the automatic replacement of vehicles. The plan pointed to the necessity for packing automotive parts and supplies for overseas shipment in standard lots, each lot to contain all the assemblies, parts, accessories and motor supplies required for one year's maintenance of

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26 Memo to the C.G., SOS, ETO, from Col. F.S. Ross, 6 July 1942.

27 The plan referred to the fact that port equipment necessary to operate 24 berths simultaneously was required and that this equipment had been requisitioned from the U.S. on 14 May 1942.

types of vehicles to be shipped to the British Isles. Furthermore, it recommended that each chief of a supply service in the U.S. should be directed to include in each shipment of special vehicles for which he was responsible, a 12 months' supply of spare parts.

No reference was made in this supply plan to the number of motor vehicles which would be required, but the 30 June plan had called for the shipment of 112,000 vehicles during June, July and August.[28] These vehicles, with necessary spare parts and supplies, would require 1,400,000 measurement tons of cargo space.

It was estimated that the British railways would require 400 U.S. 2-8-0 type locomotives for handling Bolero traffic. Some of these locomotives would become available for operations on the Continent. There also was an immediate need for 15 switch locomotives required for operations at U.S. depots, which had been requisitioned from the U.S. on 15 June.[29] The transportation annex failed to mention the need, brought out in a Corps of Engineers' study, for 200 railway "war flats" to assist the British railways in handling Bolero traffic.

The plan for transportation operations on the Continent had not been sufficiently developed by 9 July to permit final presentation. However, tentative estimates were prepared showing the port equipment and the number of railway locomotives and railway cars which would be required. Under the assumption that only one major port would become available immediately following the assault, and that another major port would

[28] Bolero Plan, undated, received in the Planning Div., OCT, SOS, with a pencilled date 30 June 1942.

[29] The Chief of Engineers in the U.S. already had been authorized to procure 275 switching locomotives. Memo to Chief of Engineers, SOS, from Brig.Gen. LeR. Lutes, 19 June 1942.

become available shortly thereafter, the COOT drew a list of port equipment which would be required not only to replace damaged dock facilities but to provide the additional equipment necessary for discharging monthly approximately 200 vessels lifting 3,000 deadweight tons of cargo.

The plan also contained estimates of the number of locomotives and railway cars which would be required for immediate operations on the Continent, and the total amount of railway equipment which ultimately would be required to support a projected force of 6,000,000 troops. These estimates challenged the productive capacities of both the U.K. and the U.S., but afforded a preview of what ultimately might be required when the invasion of the Continent actually was undertaken. They called for 1,000 locomotives, 50,000 box cars, 30,000 gondola cars, 16,000 freight cars, 2,000 refrigerator cars, 2,000 brake vans (cabooses), 2,000 tank cars and 20 hospital trains.

On the other hand, the estimates differed materially from those drawn up by the Office of the Chief of Engineers in Washington, on the basis of studies which its representatives had undertaken in the U.K. It seems unnecessary to compare the two sets of estimates, except to point out that the Office of Chief of Engineers included a far larger number of railway locomotives and rolling stock for initial operations on the Continent than did the theater plan, but it drastically reduced the amount which would be required for longer term operations.[30]

After comparing the two sets of estimates, the Transportation Serv-

30 Memo to Brig.Gen. T.H. Dillon from G. Metzman, Ch/Rail Div., OCT, and Col. L.T. Ross, Ch/Railway Branch, Troops Div., OCE, SOS, 15 July 1942.

ice and the Corps of Engineers in Washington jointly sought a reconciliation of the differences from Headquarters, Service of Supply, so that requests for the necessary materials could be processed through the War Production Board. At the same time, the OCOT in Great Britain collaborated with the American Lend-Lease Mission in London, to determine from the British Ministry of Supply how many locomotives and railway cars Great Britain could furnish. The drain on American output was so severe that the American railroads had been allotted only 400 of the 900 locomotives they had requested to handle the expanding railway traffic in the U.S.[31] But these negotiations also were upset by the decision to undertake the Torch operation. Undoubtedly it was fortunate that American and British production facilities were not called upon to produce the huge amount of railway equipment provided for in 1942 planning, at least until a greater amount of time had elapsed, and until the demands of other theaters and of Lend-Lease had been met.

Commencing U.S. Movement Control Activities

Previous reference to Colonel Ross' efforts to maintain an American transportation organization cooperative with but separate from the British organizations, is incomplete without further explanation of the assignment of American personnel to movement control positions. Since these assignments affected primarily the movement of U.S. troops and supplies by rail, it is appropriate first to describe briefly certain aspects of British railroads.

The railways in the U.K. covered a distance of approximately 20,000

31 Personal letter to Col. N.A. Ryan from Maj.Gen. C.P. Gross, 25 Nov. 1942.

miles in an area less than one-thirtieth as large as the U.S. In 1937 they had carried three times as many passengers as all American railroads combined.[32] This passenger traffic, along with a comparable amount of freight traffic, had considerably expanded during wartime, and was to expand still more with the influx of heavy shipments of American military personnel and cargo.

It had been stated that British railroads were the best equipped and operated in the world.[33] Their equipment, however, differed considerably from that in the U.S. British passenger cars were not only smaller than American cars, but had been designed to effect ready discharge of passengers from many compartments. The British freight car, termed a "wagon", also was much smaller than the corresponding American car. A wagon generally carried only 10 to 20 tons of freight, as over against the 50 to 60 tons carried on American cars.

By 1942 British railroads were handicapped in three ways -- first by a shortage of manpower resulting from the drain of railroad workers for wartime purposes; second by the reduction in the amount of available rolling stock due largely to a heavy export of railway equipment to other theaters of operation; and third, by the small tunnels on several lines. The size of these tunnels had made it impossible to move tanks and other large implements of war without lowering the wagon beds. Since it was difficult to rebuild the freight cars during the early years of the war, the British had constructed 55 of what were called "warwell" wagons, possessing drop beds which afforded two or three feet of additional head

32 History of the T.C. in the ETO, Vol. I, Appendix 15. There were 7,000 passenger stations in the U.K.

33 The Story of Transportation in the U.K., p. 115.

space for cars employed where there were tunnels. In addition to war-well wagons, there were 45,838 passenger carriages and 1,250,000 freight wagons in Great Britain.[34] The number of available locomotives in the U.K. was 19,624, of which 1,200 were in need of some repairs. In respect to both locomotives and railroad cars by 1942 the British railroads required heavy shipments of U.S. equipment, as Bolero estimates indicate.

In 1923 the large number of railway lines in Great Britain had been consolidated into four major lines, which consisted of the Great Western Railway and the Southern Railway, the London, Midland and Scottish and the Northwestern Railway.[35] Effective 1 January 1941, the British government had taken control of all of these railways and had agreed to pay them a fixed yearly rental. As previously mentioned, control of railway operations was placed in the hands of a Railway Executive Committee, with which the U.S. Transportation Service collaborated in obtaining additional rolling stock and equipment, and in building up a reserve for future operations on the Continent.

The control of railway movements, however, resided in the British Army Movement Control organization referred to above. This agency operated through subordinate Movement Control officers which were stationed in the seven military commands in the U.K. During the summer of 1942 Colonel Ross assigned an American officer, termed a Regional Transportation Officer, in each of the Commands, to function alongside his British counterpart.[36] Since for convenience these Commands were divided into

34 History of the T.C. in the ETO, Vol. I, Appendix 15.
35 The Story of Transportation in the U.K., p. 71.
36 Ibid, p. 74.

Districts, Colonel Ross also app District Transportation Officers. Initially, there was insufficient Transportation Service personnel to place officers in all of the British Movement Control offices, but by December 1942 the increase in Transportation Corps personnel permitted nearly complete representatives.

The method by which the British and American Movements officers functioned under Major General Lee's compromise suggestion intended to assure an integrated T.C. organization, was through Boards of Control established in each British Command.[37] Within each Command the appropriate Board nominated an American or a British Movements officer as chief of a District, on the basis that he represented the nation which had the most freight moving through that District. Each such officer was responsible for all movements passing within the District of his jurisdiction. By February 1943, T.C. representatives were handling practically all American movements in the Western and Southern Commands, which covered the regions where American operations then centered

The lowest echelon of the British Movements agency consisted of RTOs, assigned to each important port, station or depot served by the British railways. RTOs were responsible to District Transportation Officers. In order to secure properly trained Transportation Service personnel for similar assignments, Colonel Ross secured the activation in the U.S. of a new Transportation Service unit called a Group Regulating

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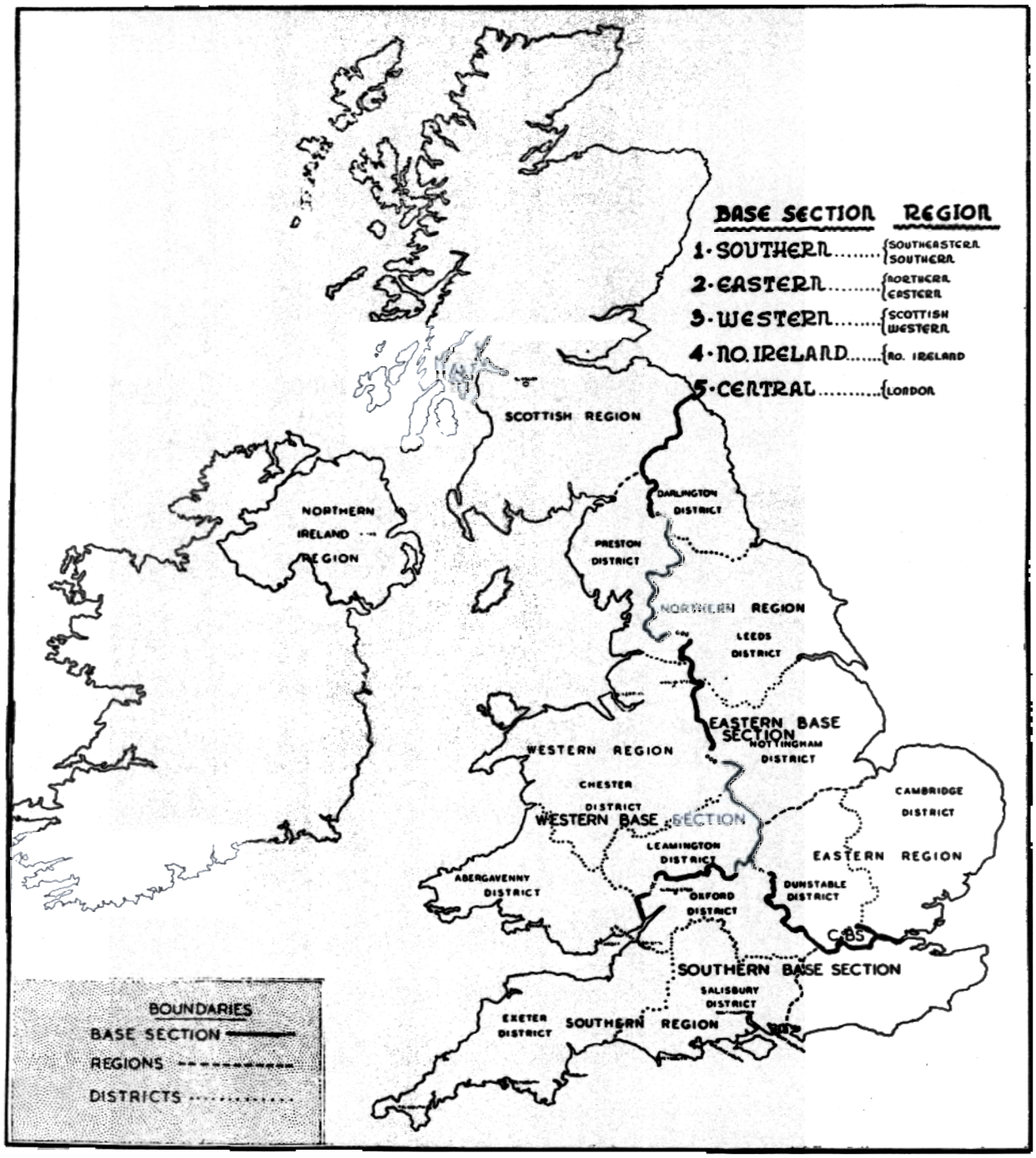
[37] Ibid, p. 16.

Station.[38] The first such unit arrived in the U.K. during July 1942, and its members were assigned to localities where American movements were to be important and where the personnel of the unit could learn from the British RTOs to perform the arduous duties expected of them.

RTOs were to become the corner stone of American movement control operations, not only in the British Isles, but later on the Continent when the campaign to defeat Germany was undertaken. Their duties included controlling the movement of all American troops and cargo in coordination with the corresponding British officers, arranging for all necessary moves, and furnishing advice and aid to civilians travelling in the U.K. In regions where U.S. movements were particularly heavy, RTOs worked as teams because they had to perform 24-hour service and were responsible for a tremendous amount of paperwork. Despite the great demand for them, it was not until the summer of 1943 that additional Traffic Regulating Stations were dispatched from the U.S. to the U.K., to cope with the expanding traffic of that period.

Before recounting some of the problems faced by American RTOs it is important to notice that on 24 August the SOS headquarters established base sections in the U.K. Transportation officers were then appointed for each base section, a step which, to a certain extent, reduced the importance of Regional Transportation Officers. These base sections were five in number (one of which was located in Northern Ireland), and the area which they embraced included one or more regions. The boundary

38 Ibid, p. 80. These units should not be confused with Regulating Stations, whose assigned duties included functioning as a supply and a traffic regulating unit between each American Army in a theater of operations, and the supporting Communications Zone area. Group Regulating Stations also were called Traffic Regulating Groups. The names appear to have been employed interchangeably.



lines of areas controlled by District Transportation Officers, however, sufficiently coincided with base section boundary lines so as to permit strict Transportation Officers to continue functioning effectively. On the other Hand the work of the Regional Transportation Officers then became primarily supervisory, so that the District Transportation Officers and the RTOs remained the core of the American movement control setup.

It required no little care for RTOs to learn the British methods of movement control, and to coordinate their work with British officers. The early methods typical of American soldiers for speeding up operations, and the requests for additional cars or trains to move American troops, occasionally led to disputes with British movements personnel, but gradually representatives of the two nations became accustomed to each other's methods. The separate demands of American Air Force units, which occasionally were not coordinated through established RTOs, also created a number of difficulties which only continued working together of British and American officers could overcome.[39] It has been reported, however, that the Transportation Service obtained hearty cooperation from both the Railway Executive Committee and the British Movement Control organization.[40]

An illustration of the type of work performed by American RTOs may be found by explaining the manner of handling the movement of American troops and cargo within t Britis Isles. Upon the arrival of American troop units at a British port, the port RTO, having been informed by

39 Ibid, p. 94.
40 Ibid, p. 78.

Movement Control headquarters at London of the destination of these units, telephoned the District Transportation Officer having control in the area of the incoming troops' camp. The port RTO supervised the proper entrainment of the debarked troops, turning them over to a Train Escort Officer. The Train Escort Officer supervised the journey to the troops destination, where they were turned over to another RTO who had been instructed of their arrival by the District Transportation Officer. If the journey had been a longer one, RTOs at mid stations had arranged to serve meals or refreshments to the troops enroute, because the British railways lacked extensive dining car service.[41] Stops for refreshments lasted for only 20 minutes, thereby requiring prompt meal service.

When a move of freight from a British port to an inland destination was contemplated, the port RTO dispatched by teletype full notification and instructions for the move to the District where the inland movement would terminate. Such notifications were called Traffic Dispatch Advices (TDA's).[42] After the American RTOs became thoroughly acquainted with these and other forms employed by the British railways, they were able to suggest certain simplifications in the use of the forms. One of the first alterations was to eliminate information verifying train arrivals. It should be observed that all orders issued by the London headquarters for the movement of American troops and freight were signed by Colonel Ross or his representative, under the system of joint movement control which the Transportation Service had established with the British movement control organization.

41 Ibid, p. 83.
42 Ibid, p. 78.

II. INITIAL PORT OPERATIONS AND REVISED PLANNING

In 1942 the seemingly ample ports in the British Isles were subject to several obvious limitations.[1] In the first place east coast ports were more subject to enemy air attacks than those of the west coast and therefore not so readily available for receiving cargo and personnel. The regular import and export program of British civilian goods was supplemented by heavy demands for handling military shipments, bringing the total number of incoming vessels to between 300 and 400 monthly. In view of the fact that the American Bolero program would require the receipt of an additional 120 vessels per month, careful programming and diversion of vessels was necessary. Some of the British ports were not equipped to carry an additional load, partly because they had been damaged by Nazi air attacks, partly because of a lack of adequate facilities and equipment, and partly because the civilian stevedore workers were older men, since the younger men had been taken into the British Army or assigned to positions in other essential war industries. The American Transportation Service (later the Transportation Corps) endeavored to remedy these deficiencies and assist in handling American shipments of cargo and personnel wherever possible.

Colonel Ross initially selected four principal port areas for establishing T.C. installations. The selection was based on the fact that the ports were already operated by the British, they were comparatively safe from the enemy, and they were closer to the area occupied by U.S.

[1] In 1939 the U.K. imported 62,000,000 long tons and exported 69,179,000 tons of cargo.

troops than other British ports. One area centered at Belfast, Ireland where the first contingent of U.S. troops had landed in January 1942, and the second at Glasgow, Scotland, which was destined to handle large shipments of American personnel. The third group of ports was located in the Bristol Channel, convenient for distributing goods to American forces stationed in southern England. The fourth group was situated between Glasgow and the Bristol Channel in the Mersey River region. The central port there was Liverpool, one of the largest of the British ports. These ports were operated under the British Sea Transport Service until the latter was replaced by American personnel for handling American personnel and cargo. British Movement Control officers handled all movements from the port until T.C. personnel became active.

The first American port headquarters which operated in the U.K. was activated at New York on 9 April 1942 and arrived in North Ireland during the following May.[3] Belfast was considered a comparatively good port. It could berth 10 ships and its ample drydocks made it indispensable for repairing vessels during the period when submarines were exacting a heavy toll of Allied shipping. On the other hand, when American port headquarters arrived, all of the piers were not in first rate condition. Some had been destroyed by enemy bombing and were being repaired only slowly by the local harbor commission. Furthermore, there was a lack of port equipment. The principal facilities consisted of 300 roller bearing conveyors for use on the piers, five tugs and two gasoline barges. There were no cranes of any kind and it became necessary for the Ameri-

2 The Story of Transportation in the U.K., p. 22.
3 Ibid, pp. 30ff.

can port headquarters to secure from the U.S. not only two 20-ton cranes but slings and trays sufficient to discharge six vessels at once. Supplementary equipment, such as two 50-ton floating cranes, were loaned to the port headquarters by the MWT. All of this equipment, however, proved inadequate for efficient handling of the load which the port was called upon to carry.

At Belfast as well as the other North Ireland ports, and indeed at all ports receiving American cargo and personnel in the U.K., port labor was so well organized that with the backing of the Ministry of Labor, it could stop the employment of American port troops. As will be explained later, this restriction was modified by the summer of 1943, but in the meantime the handling of American cargo was frequently adversely affected by the necessity for employing exclusively civilian stevedore labor. Moreover, a stevedoring firm in North Ireland controlled all dock workers. Because it received a commission on the gross stevedore payroll, it was to this concern's advantage to drag out all discharge operations. Not until the summer of 1943 was it possible for the American port authorities and the stevedoring concern to work out a new contract whereby it was to the company's interest to assure a speedy turnaround of vessels.[4]

The North Ireland ports proved valuable, however, for receiving large shipments of American cargo, for outloading a portion of the force that was dispatched for the North African invasion and for discharging airplanes that had been shipped as deckloads. Then, as the flow of

[4] The stevedoring firm also attempted to determine at which North Ireland port ships carrying U.S. cargo should berth, but this effort was successfully resisted. Ibid, pp. 32-33.

cargo from the U.S. to the United Kingdom became heavy in the summer of 1943, use of the North Ireland ports showed a marked decline, and they never again attained the importance they had held in 1942 and early 1943. During the period of peak activity there was a complement of 28 U.S. officers and 400 enlisted men attached to the port, but later this number was drastically reduced. With its reliance on local civilian laborers for handling cargo, the load on the U.S. port organization, from 1 June to the end of December 1942 is reflected in the figures of approximately 4,704,000 measurement tons of cargo handled and approximately 58,330 U.S. troops debarked.

The most important port for the debarkation of American troops was Glasgow.[5] It possessed outstanding facilities in its docks and equipment. These advantages, however, were offset by the fact that the port was located 15 miles up the Clyde River, which was of shallow draft and afforded only a narrow channel. Consequently, in order to debark troops from the large transports, particularly the British "Queens" which were extensively used for transporting American personnel to the U.K., the troop ships anchored at the mouth of the River in what was called "the tail of the Bank."[6] The troops debarked from the transports in midstream to tenders. These tenders, which had been used during World War I to carry equipment to Russia, were large double-deck vessels capable of transporting 500 persons at a time. The tenders brought the troops to the docks for direct transfer to trains, but when the weather

5 Ibid, pp. 40ff.

6 Between June 1942 and July 1944, 450,177 U.S. troops, in about equal proportions, were transported by the QUEEN ELIZABETH and the QUEEN MARY from the U.S. to the U.K. History of the T.C. in the ETO, Vol. III, Chap. VII.

was rough and stormy it was not always easy to maintain schedule which would permit the prompt departure of the trains.

On 8 June 1942 Captain K.D. MacKenzie was appointed American port commander in the Clyde area, and he immediately entered upon his duties by assisting in the debarking of troops from the QUEEN ELIZABETH. Later Lt. Colonel J.A. Crothers assumed command of the port. By September he had increased his organization to 8 officers and 30 enlisted men. Shortly thereafter the 5th Port Headquarters arrived, absorbed the existing U.S. port detachment, and prepared to take over control of all operations affecting the U.S. troops.

The American port unit had been assured of smooth and orderly schedules as long as the British Army Movement Control organization was in control. The same condition did not obtain when later the Royal Air Force Movement Control organization handled the debarkation of American Air Corps troops. Nevertheless, by 5 November 1942 the 5th Port was able to take over complete control of American troop movements and provide for orderly movement on all occasions.

As the number of American troops arriving at the port increased, it was decided that the 5th Port should have complete control of all troop movements at the port, unless the movement consisted entirely of British troops. This agreement, reached in April 1943, proved of particular value to the American port authorities.

It required an even longer time before the 5th Port was given control of the receipt of American cargo at the Clyde Area ports. A decision taken in November 1942 to divorce the British Sea Transport Service from American shipping was not put into effect until March 1943, and it

was not until the following June that the last element of authority, namely the decision as to where ships would be berthed, was placed under 5th Port control.

Representative of several improvements that the American port headquarters brought to the British methods of operation, was the 5th Port use of an economical method of loading jeeps on outbound ships. The port headquarters stowed one jeep on top of another, thus avoiding waste of 10 feet of head room in each ship. Special perpendicular poles were erected to take the weight of the top jeep off the wheel and axles of the lower one. The stowage method proved to be so safe and economical that it was adopted by the British. The port also effected an improved method of stowing bombs, which provided greater security. A layer of planks was placed between each layer of bombs and additional planks were laid to prevent the ends of bombs from rubbing together.

From 1943, Glasgow and the other Clyde Area ports possessed one of the best known T.C. installations in the theater, for ultimately more troops were handled there than at any other port in the U.K. Even before this time the port organization had rendered signal service by outloading a majority of the troops which were dispatched on the first three convoys to North Africa.

Near the center of the west coast of England are the Mersey ports, dominated by the huge port of Liverpool with its 8-mile front of quays.[7] Liverpool had been subjected to a considerable amount of bombing prior to July 1942 when Transportation Corps representatives were assigned to the port. Many parts of the city, as well as numerous regions along the

The Story of Transportation in the U.K., pp. 47ff.

water front, showed the destructive power of the Nazi Luftwaffe. Another disadvantage at Liverpool was the fact that being located on the Mersey River, it was subject to fluctuations of the tide. The river was available for navigation only during the four hours of flood tide, although a series of locks at the entrance to the docks made it possible to berth ships independently of the rise and fall of the tide.

The docks at Liverpool were old and their cobblestone surface inconvenient for the use of motorized equipment. The pier equipment was outmoded and inadequate. Rail tracks on the piers were always located on the inside away from the ships, making it impossible to unload directly from ships to rail cars. However, there was a sufficient number of lighters for unloading a large number of ships at anchor in the river, and an ample supply of tugs for towing the lighters to appropriate places

Each of the docks had heavy lift cranes, in addition to which there were a number of heavy lift floating cranes for removing tanks and trucks from ships' holds.

Late in the summer of 1942, the 4th Port of Embarkation, under Colonel Cleland Sibley, was assigned to operate at the Mersey ports.[8] Gradually, as U.S. port personnel were added, they assumed almost complete control at Liverpool, and by 1 September 1942 shipments from the U.S. comprised most of the cargo landed there.[9] The 4th Port was not able to obtain complete control of incoming ships, however, until June

[8] Colonel Sibley became the American port commander on 9 July 1942.

[9] Liverpool handled the debarkation of a considerable number of U.S. troops, in addition to its discharge of U.S. cargo. Parenthetically, it should be noted that a strike of British longshoremen against working overtime during August was met by employing American and British troops. Ibid, pp. 49-50.

1943, because the Sea Transp[illegible]e w[illegible] reluctant to relinquish its authority. Meanwhile, however, the 4th Port troops introduced the use of an effective sling for the safe unloading of explosives, and developed a special set of hooks, called "dogs", for the efficient unloading of landing mats.

Supplementing Liverpool was the port of Manchester which was located on a canal connecting it with the Mersey River. The narrowness of the canal and its shallow draft proved a handicap to moving ships readily to the port. Furthermore, the port lacked an adequate supply of civilian dock labor, and consequently Manchester became one of the first British ports to employ U.S. port battalions. Manchester was used particularly for unloading grain, foodstuffs, and heavy cargo such as steel. The ability to bring this heavy cargo so far inland made it possible to effect huge savings in railroad freight movements in the Mersey River area.

South of the Mersey was the Bristol Channel with its five principal ports of Swansea, Barry, Cardiff, Newport and Avonmouth.[10] Colonel Ross selected these ports for receiving American cargo on 15 June 1942, and later in the month the 3rd Port, the first American mobile port headquarters to operate in the U.K., had arrived to take charge of American port operations. The port was placed in charge of Lt. Colonel E.H. Lastayo, who earlier had been appointed American port commander for the area.[11]

Initially there was an adequate number of dock laborers in the Bristol Channel, but the amount of equipment was considered insufficient,

[10] Ibid, pp. 58ff.

[11] History of the 3rd Port, p. 4.

and the lack of storage facilities in the dock areas proved a handicap to efficient port operations. There were not enough sheds for storing cargo, so that everything which might be damaged by rain had to be shipped out of the dock area immediately. In view of the necessity for sorting incoming cargo before it was dispatched from dockside, prompt clearance of the docks proved tediously difficult. Furthermore, the tracks serving the ports connected near Bristol with the main line of the Great Western Railway, which was not prepared for the overwhelming flow of traffic that resulted from the influx of American military cargo; hence a bottleneck developed occasionally. One period of particularly heavy movements occurred during the preparation of convoys for the North African campaign. A second peak load developed during the summer of 1943 at the beginning of the period of the heavy buildup of the Bolero program.

During the summer of 1942, T.C. representatives also served at certain east coast ports, such as Hull, but it was not until 1943 that these ports, including London, and the south coast ports of Southampton and Plymouth, came into prominence while receiving the overflow of incoming cargo that could not be handled through the west coast ports.

Assigning incoming American ships to British ports so that they would interfere least with British activities and yet be able to discharge their cargo in areas where it could be most efficiently handled for American purpos te lem wh Colonel Ross's organization endeavored t rsion Committee f the Ministry of War Transport. Colonel Ross assigned a T.C. representative to this Committee, and endeavored to insure that he received appropriate ad-

12 The Committee a s ma ncoming ls a month prior to 6 June 1944.

vanced information of the cargo on all incoming American vessels. Yet it required a long time to work out a system whereby this advance information was received in the U.K. prior to scheduled Committee meetings.

The ports in America dispatched by radio a weekly cargo forecast, informing American officials in the U.K. approximately one week in advance regarding expected departures and the general nature of the cargo of all vessels.[13] This brief notice was followed by two cables dispatched when the vessels sailed from the American port. The first was a cable which gave the number of ships, port of departure and sailing date. The second listed as accurately as possible items of cargo on each vessel by hatch and deck level. These cables were followed by the dispatch by air of the manifests of each vessel, showing in detail the cargo carried and the location of all items aboard. If a manifest failed to arrive in the U.K. in time for an appropriate Diversion Committee meeting, a breakdown of the cargo loading cable was used as a substitute, but such substitutions were unsatisfactory. Officials in the U.S. encountered great difficulty in delivering manifests as required. Finally, they secured two airplanes for carrying duplicate copies of manifests, but not until the first part of 1944 did the theater report that manifests were uniformly arriving in time for use at scheduled Conversion Committee meetings.

Another difficulty arose from the fact that during 1942 U.S. Army cargo often arrived in Great Britain from the U.S. with no depot or serv-

13 The Story of Transportation in the U.K., pp. 132ff.

ice destination marking whatever, or with very inadequate marking.[14] This condition made the problem of distribution of freight in the U.K. almost insoluble. Colonel Ross took up this question at T.C. headquarters in Washington and an investigation was undertaken at the New York Port. It was found that thousands of pieces of cargo were arriving there weekly with no destination marks. Vigorous efforts ensued to correct this deficiency. The Chief of Transportation in Washington appealed to the heads of supply services to insure more complete and accurate marking, and he assigned one officer to the New York Port with the sole duty of checking on the marking of incoming cargo.[15]

Some improvement in marking followed these efforts, but since the problem continued essentially unsolved until 1943, it will be considered in a subsequent chapter. However, it may be noted that on 25 August 1942, Major General Lee placed the responsibility for coordinating all matters pertaining to packing and marking in the theater in the office of his Chief of Transportation. Not only was Colonel Ross able to work with the New York Port in improving the packing and marking situation, but he also established within his own staff a Packing and Marking Division to handle similar matters in Great Britain. This Division prepared valuable reports for improving the packing of supplies and was instrumental in the activation of small mobile packing squads which supervised

14 After a personal inspection at Liverpool, Colonel Ross reported that 30 percent of the total tonnage there could not be identified at all, and approximately another 18 percent was identified only as to the type of supply, with no indication of its destination. History of the T.C. in the ETO, Vol. III, Chap. I, pp. 13-14.

15 Personal letter to Col. F.S. Ross from Maj.Gen. C.P. Gross, 8 Sept. 1942.

the packing of organizational equipment. The squads consisted of eight to ten enlisted men and an officer, and they performed a valuable service in training personnel to complete the packing of organizational equipment in the shortest possible time. Squads were stationed at given points within the theater and their assignments were controlled from central headquarters.

Of incidental interest in the handling of incoming cargo in Great Britain was the employment of cargo security officers on all U.S. vessels. These officers were supposed to be informed of the location of all items of cargo for the vessel on which they travelled, but since in many instances the officers were not appointed until just prior to the time of their ship's sailing, they did not have the opportunity to observe stowage methods or location of cargo. Theater historical reports fail to indicate whether or not there was subsequent improvement in the work performed by Cargo Security Officers, but from general knowledge it may be said that as they gained experience they proved to be very useful.

Preparing for the North African Invasion

As previously indicated, during July Bolero preparations were interrupted by the Combined Chiefs of Staff decision to undertake an Allied campaign in North Africa (Torch). This decision did not mean that the Bolero program was completely stopped, although authorities differed as to the probable effect the Torch campaign would have on Bolero.[17] The overall effect on shipments to the U.K. was to reduce the July esti-

16 The Story of Transportation in the U.K., p. 129.

17 Torch — Its Relations with the ETO, op.cit., pp. 3 and 36.

mates of the amount of cargo to be moved, while monthly shipments from the U.S. for August through October increased vastly over what they had been prior to July. A considerable amount of the Bolero cargo as well as troops transported to the U.K. prior to October eventually was reshipped to North Africa. These shipments greatly reduced U.K.'s stockpile and troop strength, but the Bolero program was continued on a small scale throughout the period of the North African campaign. It was necessary to maintain at least a minimum amount of reinforcements in the U.K. to meet eventualities on the Continent.

The effect of the North African campaign on transportation operations in the U.K. calls for further comment. A large number of officers from the OCOT was shifted from planning for the Continental invasion to planning for the North African operation.[18] Other officers, particularly those from the Traffic Branch of the Operations Division, formed a liaison group which worked with British agencies in carrying through the outloading of troops and cargo. After 13 November this grour under the command of Colonel D.S. McConnaughy, became known as the Export Movement Division. The work of the group, later the Division, was necessarily limited to coordination of U.S. troop and cargo movements with the British Movement Control organization. By the fall of 1942 the T.C. had obtained extensive control of movements involving its own forces and equipment, but the preparations for Torch were too large for the T.C. to handle, and hence the main responsibility was placed in British

18 The Story of Transportation in the U.K., pp. 147ff; and U.S. Army Transportation and the Conquest of North Africa, 1942-1943, Monograph No. 9, OCT, ASF, p. 42.

hands [19]

One of the special difficulties encountered in mounting the Torch forces concerned the markings on incoming American military cargo. Whatever improvement he had been able to attain in this respect by September 1942 did not serve for efficient depot operations. It should be noted, however, that U.S. depots in the U.K. were extremely short-handed and that, furthermore, a large amount of American cargo received prior to October 1942 had been distributed to British depots. These factors caused great difficulty in locating supplies required for mounting Torch. As a result, General Eisenhower had had to request from the U.S. shipments of cargo which duplicated previous shipments.[20] The inability to locate all available supplies in the British Isles plus the urgent needs for Torch operations also resulted in a last minute shipment of 19 shiploads of cargo. Whatever the reasons for the inability to locate U.S. supplies in the British Isles, Major General Lee declared that the fault did not lie with the T.C. for it had accomplished its job 100 percent.[21] Colonel Ross also stated that T.C. records of all incoming cargo were in perfect order, and that furthermore he had kept the records of all cargo distributed from the ports.

The assault convoys which were to attack North Africa on 8 November 1942 were divided into three task forces of which one, the Western Task Force was mounted in the U.S. The other two, the Central and East-

19 Personal letter to Maj.Gen. C.P. Gross from Col. F.S. Ross, 26 Oct. 1942.

20 U.S. Army Transportation and the Conquest of North Africa, op.cit., pp. 30ff. American supplies in the British Isles suffered a 20 percent loss from pilferage.

21 Personal letter to Maj.Gen. C.P. Gross from Col. F.S. Ross, 21 Sept. 1942.

ern Task Forces, were mounted in the U.K. Most of the personnel of the two mounted in the U.K. consisted of three American divisions. The Torch assault ships were divided into a personnel and a cargo convoy for each task force. In all there were 41 troop vessels and 46 cargo vessels which left British ports on 22 October for the Torch assault.

In mounting the troops of the Torch force, the Troop Movement Branch, Export Movement Division, prepared the tables listing the various American units, and the amount of personnel and impedimenta to accompany them, which the Force Commanders had decided were necessary. From these tables the War Office and the Export Movement Division established the priority of movements of the various units and planned the convoys on which they were to travel. Then Movement Instructions were prepared for these units, signed by the British Director of Movement Control and the U.S. theater Chief of Transportation. These instructions were delivered to the units in the field by the U.S. Regional Transportation Officer (RTOs) under whose transportation jurisdiction the various units came.

In loading cargo for the Torch operation the T.C. in the British Isles had gained experience in combat loading troop transports and in the prestowage of cargo vessels. Prestowage was a plan that had been worked out by the MWT prior to the arrival of American forces in the British Isles.[22] In the summer of 1942 two marine superintendents had been detailed by the Chief of Transportation to learn the routine and terms of prestowage, and subsequently other T.C. representatives received similar assignments. They learned to study the dimensions and

[22] The Story of Transportation in the U.K., p. 124.

structure of a vessel in order to load it in such a way as to facilitate discharge in accordance with a pre-arranged plan showing priority for all items of cargo. This form of stowing cargo did not make the most of the space available, but it did accomplish its aim of supplying combat forces with the articles quickly and in the proper priority.

The method of preparing for loading cargo affords some interest, particularly because in the main, it was employed later for the cross-Channel assault. The Force Commander notified the Chiefs of Services what supplies were called for and they in turn notified the depots. The depots reported to the Export Movement Division on D.S.S.D. forms, called "dizzy dees", what they had to move to the ports. From the "dizzy dees" the Division made up a list of every item going in a convoy. Then the prestowage section extracted the supplies determined for each ship and made a manifest plan showing how those supplies were to be stowed. A Movement Instruction sheet for each ship was prepared, giving each lot of cargo an index number and indicating when each cargo load should move from the depot to the port. Some leeway was permitted the port authorities in loading supply ships, and it must be noted that last minute changes were always occurring. This was true for both supplies and personnel. There was also considerable difficulty in obtaining the right type of ship with the proper equipment for handling certain types of supplies. Furthermore, ship allocations occasionally were changed, making it necessary to draw up new loading plans hastily. A few mistakes in planning were bound to occur, but the entire mounting operation afforded valuable experience to the T.C.

The Torch operation caused the T.C. in the British Isles to lose a

large number of its personnel.[23] Many of the top officers, including Colonel Ross, accompanied the expeditionary force to North Africa, some to remain throughout the entire period of Allied operations in the Mediterranean. Some of the T.C. personnel later returned to the European theater when the invasion of southern France was undertaken on 15 August 1944. Others, such as Colonel Ross himself, stayed only long enough to assist in organizing transportation activities in North Africa and then returned to the British Isles to prepare for and participate in the later cross-Channel assault.

The drain of units from the British Isles greatly depleted the strength of the T.C. there. Three port battalions (with a fourth which left the U.K. in January), a large detachment of the only U.S. railway unit in the British Isles (one company of the 761st Railway Operating Battalion) and the 3rd Port of Embarkation, all left for North Africa during the early part of the campaign.[24]

It was more than six months before renewed effort was made to build up T.C. personnel in the U.K. However, the staff under Colonel N.A. Ryan, Deputy Chief of Transportation, outloaded the follow-up shipments of American troops and cargo destined for North Africa, and continued to receive and distribute reduced shipments of cargo from the U.S. In short, while the major logistical effort from the U.S. had been diverted

23 Colonel Ross declared that the T.C. organization was "pretty well stripped". He had endeavored to build the nucleus of an organization to handle 1,000,000 men, and he believed he had accomplished his aim. He also believed that he could rebuild his organization very rapidly on the framework remaining in the U.K., if Bolero was undertaken again. Personal letter to Maj.Gen. C.P. Gross from Col. F.S. Ross, 14 Oct. 1942.

24 History of the T.C. in the ETO, Vol. I, Appendix 9. During November the Military Railway Service was transferred from the jurisdiction of the Corps of Engineers to the T.C.

to the North African campaign, U.S. transportation operations in the British Isles continued at a reduced pace until renewed planning for a cross-Channel attack was commenced in 1943.

Evidence of continued progress in T.C. activities in the British Isles is found in the receipt during December 1942 of the first U.S. locomotive and, during the same month, the beginning of exclusive T.C. control in outloading ships with U.S. cargo for North Africa.[25] The amount of U.S. cargo outloaded monthly in the U.K. for shipment to North Africa and the monthly troop embarkations for the same destination are found in the following table:[26]

TROOPS AND CARGO --- U.K. TO N. AFRICA

U.S. ARMY TROOPS-U.K. TO N. AFRICA			U.S. ARMY CARGO-U.K. TO N. AFRICA	
Monthly	Cumulative		Monthly	Cumulative
47,002	47,002	Oct. 1942	49,221	49,221
57,487	104,489	Nov.	67,279	116,500
25,965	130,454	Dec.	72,479	188,979
11,679	142,133	Jan. 1943	76,799	265,778
8,560	150,693	Feb.	83,127	348,905
883	151,276	Mar.	38,362	387,267
534	152,110	Apr.	18,483	405,750

There were scattered shipments of U.S. cargo from British ports to North Africa following April 1943, but these were relatively unimportant. Meanwhile, shipments of American cargo from the U.S. to the British Isles between November 1942 and May 1943 fluctuated between 20,000 and 60,000 tons monthly. As future discussion will show, these monthly shipments began to increase tremendously beginning with June 1943.

The six months of relatively slack U.S. transportation activities

25 Personal letter to Maj.Gen. C.P. Gross from Col. N.A. Ryan, 23 Dec. 1942.

26 History of the T.C. in the ETO, Vol. I, Appendix 13, Table 26.

in the British Isles as previously indicated had not been without benefit to the U.S. transportation organization and its operations. The loss of men and units, in some cases temporarily, was offset by the experience obtained in the North African Theater. Furthermore, there had been valuable lessons drawn from mounting two of the Torch task forces in the U.K. Mounting Torch necessarily had been hastily done though successfully accomplished. It seems probable that if the original plans for mounting a still larger force to undertake a cross-Channel operation had been carried through in September there would have been many more difficulties and failures than occurred in mounting Torch. Consequently, it was fortunate that the T.C. in the British Isles obtained experience in handling a lesser operation before it was required to participate in the preparations for and support of the assault on Continental Europe.

Renewed Planning for a Cross-Channel Invasion

About the time the North African campaign had reached a stalemate, that is in January 1943, top-ranking leaders of the American and British nations met for the Casablanca Conference. The decisions taken at this conference affected military operations in many theaters but of significance for this study was the determination to renew planning for a cross-Channel invasion from the British Isles. Pending the appointment of a Supreme Allied Commander for the enterprise, it was decided to activate a staff which would prepare the necessary tactical plans.[27] The Combined Chiefs of Staff selected the British officer, Lt. General F.E. Morgan, to serve as Chief of Staff with an American officer, Briga-

[27] History of COSSAC, 1943-1944, prepared by Historical Sub-Section, Office of the Secretary, General Staff, SHAEF, May 1944, p. 1.

dier General R.W. Barker, as his deputy. These officers built up a staff which operated under the title COSSAC, a name formed from the initial letters of Lt. General Morgan's position (Chief of Staff to the Supreme Allied Commander). The staff consisted of officers drawn from the British and U.S. Navies, Armies and Air Forces.

Lt. General Morgan had been directed to call upon the British service ministries and the headquarters, ETOUSA, as well as the Commanders-in-Chief of the two countries involved, to assist him in his preliminary work.[28] The greater part of the American side of the administrative planning was to be carried out by headquarters, ETOUSA and the headquarters of the Service of Supply, ETOUSA. In order that none of the American technical services in the British Isles be overlooked, ASF headquarters in Washington suggested that Major General Lee make certain that their planning staffs be fully represented in the COSSAC organization. ASF particularly urged Major General Lee to include his Transportation Corps planning staff, because of the basic importance of transportation in all phases of a cross-Channel operation.[29] Major General Lee heartily concurred in this suggestion,[30] but as later discussion will emphasize, the T.C. did not always find ready access to the agencies undertaking high level planning.

COSSAC prepared three types of operational plans. First it drew up several plans for deceptive operations, and during 1943 an effort was made to simulate preparations for mounting a force in the British Isles

28 Letter to Maj.Gen. J.C.H. Lee from Maj.Gen. C.P. Gross, 3 Mar. 1943.

29 Ibid.

30 Ibid, 1st Indorsement to Maj.Gen. C.P. Gross from Maj.Gen. J.C.H. Lee, 18 Mar. 1943.

which led the Germans to expect a continental invasion in that year. These preparations were later supplemented by a camouflage plan which threatened an invasion of the Pas de Calais area even beyond the time of the actual allied assault in Normandy.

The COSSAC organization also drew up three plans, any one of which could be placed in effect in case of a German collapse on the Continent prior to the time of the Allied invasion. These were known as the Rankin plans, and while their preparation seems to have been based on an optimistic view, there was some evidence to indicate that it was wise to have them in readiness.

The third and most important phase of COSSAC planning concerned the actual Allied cross-Channel invasion which would be a substitute for the Roundup plan of 1942. Naturally, COSSAC profited by previous planning in this field, but because the Casablanca Conference contemplated a larger troop basis for the invasion than had been set for 1942, a considerable amount of the COSSAC planning had to be done "de novo".

Initial COSSAC planning was bolstered at the all important Trident Conference of the leaders of the British and American governments at Washington in May 1943. The Combined Chiefs of Staff issued a supplemental directive for COSSAC to plan for an invasion that ultimately would require 100 Allied divisions.[31] The aim of the initial assault was defined as being to secure a lodgment on the Continent from which further offensives would be carried out. To this end plans were to be drawn up for the seizure and development of Continental ports in order that the initial assault and buildup of forces could be augmented by shipments

[31] History of COSSAC, op.cit., p. 27.

from the U.S. and elsewhere of additional formations at the rate of three to five divisions a month. The target date for the operation was to be 1 May 1944 and an outline plan was to be presented to the CCS by 1 August 1943.

During June and July 1943 an outline plan and appreciation were drawn up by COSSAC on the basis of an assault and immediate buildup force of 29 divisions. Initial landing on the Continent was to consist of three infantry divisions, with two more to follow at once, as well as two airborne divisions that would be dropped behind the assault areas The basic factor in determining where the initial assault was to be made lay in the requirement that the lodgment area should contain sufficient port facilities to maintain a force of some 26 to 30 divisions. In the initial phases, maintenance necessarily would have to take place over the beaches. Also it was expected that within 14 days of the initial assault the port of Cherbourg would fall to Allied troops. This latter fact pointed to launching the assault east of Cherbourg, with the actual point of attack near Caen.

The Caen area had been selected after considering the Pas de Calais area and the Cotentin Peninsula, which lacked respectively favorable exits from beaches or suitable airfields.[32] On the other hand, the Caen sector was believed to contain relatively light defenses, sheltered beaches and the possibility of airfield development. These factors offset the greater distance from the British coast to Caen, as over against the Pas de Calais area. Moreover, there was the possibility of an early

[32] Report by the Supreme Commander to the Combined Chiefs of Staff on the Operations in Europe of the Allied Expeditionary Force, 6 June 1944 to 8 May 1945, pp. 1-2.

capture of the Brittany ports to supplement the Allied projected capture of Cherbourg.

A COSSAC outline plan for the Overlord operation was presented to the combined Military and Naval forces of the U.S. and Great Britain at the Quadrant Conference held at Quebec during August 1943.[33] Some consideration was given there to augmenting the strength of the initial assault, and though at the time it was rejected, discussion of the subject was renewed in 1944 after General Eisenhower was appointed Supreme Allied Commander. The Combined Chiefs of Staff also considered the COSSAC estimates for the buildup of forces on the Continent and the rate of advance somewhat optimistic. Nevertheless, they approved the plan as drawn up and authorized COSSAC to proceed with further planning and preparations along the lines laid out. By 29 November sufficient progress had been made to permit the issuance of a directive for the operation to the 21st Army Group, which was placed under the command of General Sir Bernard Montgomery, the overall commander of the ground forces during the initial phases of the assault. The First U.S. Army, under Lt. General Omar N. Bradley, was placed under the control of the 21st Army Group, and these two units then proceeded with joint planning for their part in Overlord.

Transportation Problems Encountered by COSSAC

Postponing until a later chapter discussion of First Army and 21st Army Group planning, it is pertinent to note that COSSAC was faced with a number of difficulties in the field of transportation, some of which

33 History of COSSAC, op.cit., p. 30.

it was unable to solve before control of the planning was turned over to General Eisenhower. The greatest difficulty involved securing a sufficient number of landing craft for the assault operation. This problem had plagued the planners for Roundup during 1942 and it had then led to a CCS reduction of the number of landing craft originally called for from 1,400 to approximately 400.[34] The problem which COSSAC faced resulted not only from the limited number of available craft and those planned for production by 1 May 1944, but also from demands for the allocation of craft among the several theaters.[35] The demands particularly of the Mediterranean Theater, formerly the North African Theater, were subject to great fluctuation. As a consequence, the allocation of what was considered an adequate number of landing craft to Overlord was delayed until March 1944, when a final decision was taken as to the number of those to be employed in the Mediterranean and those in the cross-Channel operation.[36]

Associated with the landing craft problem was that of obtaining a sufficient number of personnel to man them.[37] Since the British seemed to be shorter of personnel than the Americans, for a time consideration was given to assigning 9,000 U.S. personnel to operate British craft. This plan was abandoned because of difficulties which would result from training these crews. Ultimately, the British obtained a sufficient number of personnel from within their Royal marine division.

During the period of COSSAC planning, the question of protected an-

34 Minutes of the SOS, Staff Conference, Washington, 19 May and 9 June 1942.
35 History of COSSAC, op.cit., p. 31.
36 Report by the Supreme Commander, op.cit., pp. 11-12.
37 History of COSSAC, op.cit., pp. 31-32.

chorages and artificial harbors was raised.[38] The outline plan for Overlord had recognized that it would be necessary to introduce supplies over the beaches for approximately three months after the initial assault. At the end of that time, it was believed that a sufficient number of ports would have been captured and brought into full operation, irrespective of German demolitions. Since these beach operations would be at the mercy of the weather, it was proposed to erect protected anchorages, at appropriate locations on Allied-held beaches. Initial planning for these anchorages took place during the period 29 June-4 July 1943. After the study of many types of facilities, and the establishment of the necessary cooperation between the military and naval agencies that would set them up and operate them, preparations were pushed forward rapidly. It was agreed that five anchorages would be projected, of which two would be complete artificial harbors, called Mulberries, as large as Dover.

The COSSAC planners struggled with the problem of securing a sufficient number of tugs to tow the harbor parts to the Continent. Of the original estimated requirement of 130 tugs, only 90 could be promised by both the British and the U.S. Furthermore, as the plans for the anchorages and artificial harbors developed, increasing the amount of equipment required to nearly 1,000,000 tons, estimates of tug requirements rose to 158. A solution of the tug problem was not found until General Eisenhower was appointed Supreme Commander, and it will be described in a later chapter.

During the summer of 1943 the COSSAC group also undertook a study

38 Ibid, pp. 32-33.

of laying marine pipelines to carry fuel from the British Isles to the Continent.[39] Their initial planning, later to be carried out under the code name Pluto, became subject to experiment throughout the remainder of the year and these experiments proved valuable in carrying out final plans.

The Casablanca Conference of January 1943 urged consideration of diversionary Allied attacks on southern France to accompany the cross-Channel operation.[40] A tentative decision to carry through such a secondary assault was examined at the Quadrant Conference in August 1943, and General Eisenhower, then Supreme Allied Commander in the Mediterranean, was directed to prepare outline plans for such an operation, which was to be known by the code name Anvil. General Eisenhower sulted with Lt. General Morgan in planning this operation, but the officials failed to agree entirely on the strength with which Anvil should be undertaken. Ultimately, the lack of available landing craft caused the temporary postponement of the Anvil assault. In fact, when it was reinstated, it was carried forward under the code name Dragoon.

Late in 1943 General Eisenhower also had had the opportunity to study the Overlord plans. He came to the conclusion that the assault should be carried out on a wider front than was then contemplated, a larger force should be employed, and that there should be a change in the area for dropping the Allied airborne troops. On 10 December 1943 the CCS notified General Eisenhower that he was appointed Supreme Commander of the Allied Expeditionary Force and instructed him to return

39 Ibid, p. 33.

40. Ibid; and Report by the Supreme Commander, op.cit., p. 11.

to Washington for conferences before assuming his new duties. Following a visit to the U.S. and consultation with the CCS, General Eisenhower arrived in London 15 January 1944, took over the COSSAC organization and began to enlarge and revise it to accord with the pattern of his Allied Force Headquarters in the North African Theater.[41]

Further study of the Overlord plan confirmed him in his views as to the necessity for enlarging the assault force, and on 23 January, he submitted proposals along that line to the CCS. At the same time he suggested postponing the target date for nearly a month, partly in order to make sure of obtaining additional landing craft which were then projected for construction both in Great Britain and the U.S. He also believed that the postponement would permit a longer period of strategic bombing of Germany, additional time for training assault craft crews and the opportunity to take advantage of better weather conditions. Furthermore, a later target date would be more acceptable to the Russians for mounting their summer assault on the eastern Nazi line, and it would permit the Mediterranean situation to become more clarified. On 1 February, the CCS agreed to a target date of not later than 31 May, but General Eisenhower indicated that the exact date could be left open, subject to weather conditions prevailing during the first week of June.

With these overall plans in mind, a description of the planning and preparations in lower echelons will be left for a subsequent chapter and attention will be devoted to the shipping problems which grew out of a revised Bolero program during 1943 and the first part of 1944.

41 Report by the Supreme Commander, op.cit., p. 3. See also Eisenhower's Six Great Decisions, Part I, The Invasion Gamble, by Lt.Gen. Wm. B. Smith, Saturday Evening Post, 8 June 1946.

III. SHIPPING AND THE BOLERO BUILDUP -- 1943-44

The U.S. Army buildup of troop and materiel strength in the U.K. during 1943 and the first half of 1944 has been described by General G.C. Marshall as one of the most stupendous logistical undertakings in military history.[1] Scheduling and implementing the shipping program for the buildup, however, were subject to enormous difficulties and there was a frequent necessity for revising the schedules and adopting various expedients. At the Casablanca Conference a tentatively approved shipping program called for the movement of U.S. Army cargo to the British Isles during 1943 as follows:[2]

First quarter	- 80,000	measurement	tons
Second quarter	- 169,000	"	"
Third quarter	- 375,000	"	"
Fourth quarter	- 359,000	"	"

Cargo shipments were to be accompanied by the movement of U.S. troops at a corresponding rate with the intention of placing approximately one million troops in the British Isles by the beginning of 1944.

The program was almost immediately affected by demands for special shipments to the North African Theater. First was General Eisenhower's 26 January request for a special troop and cargo convoy to sail to the Mediterranean by 15 February. Then during mid-February he also called for the dispatch of 160,000 additional troops between March and early June (later shortened to 31 May). Meeting these unexpected demands ad-

1 Report on The Winning of the War in Europe and the Pacific, by Gen. G.C. Marshall, p. 10.

2 Cargo Shipping Problems in Mounting the European Invasion, 1943-44, Monograph prepared by Maj. R.M. Leighton, Control Division, ASF. Unless otherwise noted, this detailed study has been the basis for information on which the present chapter is based.

versely affected the Casablanca Conference program for Bolero shipments. During the early part of March a new Bolero cargo shipping plan was prepared, which reduced the scheduled movement for the second quarter of 1943 to 77,250 tons, greatly increased the amount for the third quarter (to 526,750 tons), and reduced that for the fourth quarter to 230,000 tons. Such a program was intended to profit by the summertime advantages of favorable weather for trans-Atlantic shipping and the long daylight hours for discharge in U.K. ports. Nevertheless, it had to be modified as reflected in a new schedule submitted by the Chief of Transportation, ASF, to Lt. General Somervell on 10 April 1943.[3] This latter schedule showed an estimated rate of troop movements to the U.K. as follows:

1943	Air Troops	Ground Troops
Second quarter	92,000	31,500
Third quarter	162,000	151,400
Fourth quarter	175,000	176,100
Totals	429,000	359,000

The cargo shipping required to support this movement and accomplish the necessary maintenance was as follows:

Second quarter	138	sailings	or	equivalent	space
Third quarter	306	"	"	"	"
Fourth quarter	413	"	"	"	"

Based on these requirements the OCT proposed the following monthly cargo ship schedule:

Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
42	46	50	92	102	112	127	139	148

3 Memo to Lt.Gen. B. Somervell from Maj.Gen. C.P. Gross, 10 Apr. 1943.

The Chief of Transportation recognized that the troop lift possibility was variable, depending upon the number of available escort vessels, the number of available British vessels and emergency demands that might arise during the conduct of a global war. Nevertheless, he declared that it was imperative that equipment and supplies be made available for loading in accordance with the proposed schedule regardless of monthly troop movement variations. Already April shipments were estimated as falling behind by the equivalent of 13 shiploads, due to the lack of available cargo. Parenthetically, it may be observed that the April schedule of 42 sailings was not maintained, for despite the frantic combing of ASF stockpiles, enough cargo was found to fill only 32 vessels.

Lt. General Somervell suggested to the Chief of Transportation a conference on the proposed April shipping schedule, as soon as he had obtained definite information on the prospective availability of cargo. His suggestion undoubtedly was linked with the then current discussion, hinted at in Maj. General Gross' memorandum, on a plan to ship cargo for stockpiling in the U.K. irrespective of the rate of troop buildup. This plan, and its subsequent adoption, proved to be one of the most significant shipping proposals promulgated during the U.K. buildup period. It became known as the preshipment program.

In a recently prepared ASF study the origin of the preshipment plan has been traced to almost simultaneous suggestions in ASF, Washington, and SOS, ETO, early in 1943. Antecedents of the idea date back as far as June 1942, when initial Bolero plans had been drawn up in London.[4] The sudden change in strategic objectives in the following month ap-

[4] Copy of Bolero Plan prepared in the ETO, 30 June 1942, loc.cit.

parently rendered the inauguration of preshipment impractical in 1942 but when in 1943 the idea was reviewed, basic conditions, particularly shipping factors, favored its adoption.

These conditions arose from the situation implicit in the foregoing reference to the extraordinary demands of the North African Theater. Meeting these demands drew more heavily on available Allied troop transports than on cargo vessels, and in terms of maintaining the customary balance between troop and cargo shipments, there was an estimated excess of approximately 780,000 measurement tons of shipping space for the U.S.-U.K. run during the period May through August 1943. During the subsequent months of 1943 the balance would swing the other way and the estimated number of available troop transports would exceed that of cargo vessels, leaving a cargo space deficiency of approximately 230,000 ship tons.[5]

Taking advantage of the expected available cargo space was contin-

upon many factors. For example, it was necessary to insure that there would be no recurrence of the 1942 loss or misplacement of cargo in the U.K. More important, however, was the availability of supplies and equipment from the standpoint of U.S. production, the needs of the

training program, and the demands of other projected operations, as well as unforeseen operations. There also was a possibility that the

5 An additional factor which may have influenced the adoption of a preshipment program was the scheduling of large numbers of troop sailings on such speedy boats as the British "Queens", which carried very little cargo. The use of the Queens, which was resumed for the U.S.-U.K. run during May 1943, would practically require preshipping the equipment for the troops they carried, in order that the troops could receive their equipment when they debarked in the U.K. For the Queens' schedule, see History of the T.C. in the ETO, Vol. III, Chap. VII, p. 15.

cross-Channel assault might be abandoned, a possibility that appeared close to reality during the 1943 discussion on strategy in the Mediterranean area. And finally, in view of the fact that in March 1943 the contemplated Continental invasion was more than a year away, it was difficult to prepare a firm troop basis for the European operations until the troop requirements of that theater particularly, and also of other theaters, had become more definitely known.

Doubts concerning the outcome of these factors were sufficiently resolved by 16 March 1943 to permit qualified OPD approval of ASF request for authority to ship troop equiment ahead of the movement of the troop units themselves. This approval and the ASF discussion for the adoption of preshipment on a wider scale undoubtedly lay behind Lt. General Somervell's suggestion to Maj. General Gross for a conference on the latter's proposed cargo shipping schedule. After the conference was held, this schedule was modified chiefly by lowering the number of projected sailings for five months of the year. Of primary importance, however, was the almost simultaneous decision to commence preshipment on a large scale. By a memorandum issued 17 April to the Director, Stock Control Division, ASF, the Assistant Chief of Staff for Operations, ASF, directed that for shipments to the U.K. cargo space in excess of immediate requirements was to be used "to the maximum possible extent in order to provide the necessary supplies and the equipment for the very heavy troop movements expected during the latter part of 1943."[6]

The directive noted that on 16 April, OPD had authorized the shipment in advance of:

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6 Memo to Director, Stock Control Division, ASF, from Maj.Gen. LeR. Lutes, 17 Apr. 1943.

(a) Organizational equipment, less general purpose vehicles, for the entire U.K. 1943 Troop Basis (then only tentatively approved). The equipment was to be shipped 30 days prior to a unit's departure.

(b) Class IV (construction) supplies and equipment for the entire Troop Basis.

(c) Boxed general purpose vehicles and major items of equipment for which production exceeds current requirements for tables of basic allowances for all units in the Troop Basis.

(d) Maintenance actually expected to be consumed in 1943 by the entire Troop Basis.

(e) A reserve of 45 days' combat maintenance for the entire Troop Basis.

This list of supplies and equipment was to be set up for shipment as early as practicable, but in priority below that for fulfilling requirements for North Africa, and training requirements for troops then in the U.S. or to be activated in 1943 (on the basis of 50 percent of controlled items for divisional units and 20 percent for non-divisional units). Since the Bolero requirements for May were large and time exceedingly short, every effort was to be made to release cargo to the New York Port of Embarkation, even though this resulted in unbalanced shipments. Boxed vehicles, tanks, prefabricated buildings and other bulk cargo were especially desired. The prime requisite was immediate availability.

The first preshipped cargo for the U.K. was dispatched from U.S. ports during April 1943. Shipments continued thereafter and under slightly less severe limitations as a result of a somewhat more flexible plan worked out by ASF, approved by OPD, and issued 16 May. During May, June and July a total of 557,618 long tons of cargo was preshipped to the U.K., an amount equal to 35 percent of all U.S. to U.K. shipments

for the same period. By early August preshipment of a large share of the equipment required for the 1943 Troop Basis had been accomplished, and plans were under way to continue the program for the 1944 Troop Basis. But before noting the character of these plans, it is necessary to review some additional problems in programming both troop and cargo shipments for the latter part of 1943.

Despite the fact that a substantial amount of cargo had been preshipped, thereby increasing the total Army shipments to the U.K., there was a failure to take advantage of all available Bolero cargo space. The reason for this undoubtedly was the potential changes in strategy, which, in turn, were responsible for an unstable Bolero troop basis. In addition, there was the lack of available cargo in the U.S., or rather a low priority for a considerable part of the type of cargo which was required to meet Bolero needs.

Shipping Schedules and the Trident Conference

These uncertainties and handicaps for the Bolero buildup unfortunately were not completely resolved at the Trident Conference held in Washington during May 1943. It is true that preliminary plans for the Overlord operation were accepted, but at that time it proved impossible to provide the basis for a firm troop movement program or a cargo program for U.S. shipments to the U.K. An agreement was reached for the subsequent transfer of seven Allied divisions (four were U.S. divisions) from the North African Theater to the European Theater, and the British were assured that the U.S. would place 18½ combat divisions in the U.K. by late spring of 1944. Furthermore, the Commanding General of the ETO

estimated that he would have to have about 1,300,000 troops under his command by the projected D-Day, although by May 1943 he had not prepared a firm troop lift. The British were calling for a balanced movement of American Air Forces, Ground Forces and Service Forces troops.

In considering the adoption of a new shipping schedule, the Conference took into account the maximum potential capacity of U.K. ports and Allied shipping resources. It was believed that with the assistance of American port battalions, 150 vessels carrying U.S. military cargo could be discharged in U.K. ports each month.[7] This number was in addition to the monthly receipt of a small fleet of approximately 10 vessels which carried British aid cargo from the U.S., and, of course, in addition to British shipping for meeting her own food and global military commitments. It should be observed that the British estimated that by using only their own vessels per month, and by employing five U.S. port battalions they would be able to meet a program of 150 ships per month. The shipping program approved at the Conference called for the quarterly movement of cargo vessels as follows:

Third quarter 1943	259	ships
Fourth quarter	280	"
First quarter 1944	420	"
Second quarter	400	"

During subsequent months the Trident Conference troop movement and cargo programs not only were not maintained, but apparently planning for them had not included adequate study of troop reception problems in the U.K. To meet this latter requirement, on 9 July the British proposed a new monthly personnel buildup program which called for the re-

7 Letter to Maj.Gen. C.P. Gross from Col. Ll. Wansbrough-Jones, 19 May 1943 (with enclosures).

ception in the U.K. of a total of 853,000 troops by 31 December 1943.[8] Of this total, 677,400 were to be U.S. troops dispatched chiefly from the U.S., but also from Iceland and North Africa. The remaining 180,000 troops were to be Canadian and Royal Air Force troops that were to embark in the Western Hemisphere.

This British proposal was drawn up contemporaneously with the United States (OPD, General Staff) concern over the breakdown in the Trident Bolero troop schedule.[9] On 11 July a staff section of OPD called attention to certain major diversions from the schedule, and noted that still other troop and troop transport diversions seemed likely. It was asserted that if all of these diversions were carried through it would be necessary to embark an average of approximately 153,000 U.S. troops per month in order to attain a U.K. strength of 1,300,000 by 1 May 1944. Such a contingency, however, could not be met in the face of U.K. port capacities, for according to available estimates, it was not possible for the British Isles to receive an average of more than 150,000 troops per month, and even then monthly shipments would have to be uniform.

In view of this concern, it is surprising that greater care was not taken in OPD preparation of schedules for the deployment of U.S. forces overseas. For example, on 22 July the OCT, ASF, noted that the Joint Military Transportation Committee program (JMT 13/3/M), reputedly reflecting the desires of OPD, was in conflict with an OPD plan submitted to the OCT on 21 July 1943. This latter OPD plan indicated that

8 Plans drawn up by the British War Office, 9 July 1943, Copy #9, in the files of the Planning Division, OCT, ASF.

9 Memo to Lt.Gen. J.E. Hull from Col. A.D. Reid, Chief, European Section, Theater Group, OPD, 11 July 1943.

some 400,000 additional troops and 80,000 additional replacements were to be moved to the U.K. during the period 1 October 1943 through 28 February 1944, than were provided for under the Joint Military Transport Committee program. Moreover, the 21 July OPD plan had made no reference to the scheduled transfer of troops from North Africa to the U.K., although such a transfer was indicated in the deployment program.[10]

Such discrepancies and the preparation of a firm troop deployment program were taken into consideration in preparing for the Quadrant Conference which was scheduled to meet in Quebec in August 1943. These preparations included a proposal that the number of U.S. troops embarked in the U.S. for the U.K. on British vessels be increased from 563,000, as scheduled at the Trident Conference, to 729,000. Anticipating further reference to the Quadrant Conference, it may be noted that this increase in British lift was not effected, but later was cut to 451,300. This total was only somewhat less than the 566,400 U.S. troops that were to be transported on U.S. vessels sailing to the U.K. by 1 May 1944.

Preparations for the Quadrant Conference also included a proposed revision of the Bolero cargo shipping schedule. Both British and U.S. officials estimated that a total of approximately 1,080 vessels would be required to lift necessary cargo prior to 1 May 1944. A major difference in programming the sailing of these vessels occurred because the British believed it would be necessary to cut the scheduled sailings for April and May arrivals in the U.K. to approximately 100 vessels monthly,

10 Memo to Maj.Gen. C.P. Gross from Col. M.B. Stokes, Jr., Chief, Planning Division, OCT, ASF, 22 July 1943.

but Colonel Ross, Chief of Transportation, SOS, ETO, believed that the U.K. was capable of receiving 155 vessels in April and 150 in May, despite the apparent necessity for cutting down on receptions from the U.S.[11] In order to permit outloading for the invasion of the Continent Colonel Ross suggested that, if necessary, the British import program could be cut temporarily during those two months.

The Quadrant Conference

Establishing new and firm shipping schedules for the Bolero buildup at the Quadrant Conference was contingent upon major decisions on strategy. Allied discussion during the summer of the possibility of increasing operations in the Mediterranean were resolved, at Quebec by a declaration in favor of Allied concentration on plans for a cross-Channel attack, while Mediterranean operations would be of secondary importance. A renewed commitment was made to the transfer of four U.S. divisions and three British divisions from the North African Theater to the U.K. upon the completion of the Sicilian campaign. The target strength for U.S. forces in the U.K. on 1 May 1944 was raised to 1,456,500.[12]

A monthly schedule was drawn up for personnel movement, to insure an average monthly flow of 117,700 U.S. troops to the U.K. by 1 May 1944. This schedule would fail to achieve the target buildup by approximately 4,000 troops, but apparently it involved the use of all available shipping, and the lift could not be increased. The schedule took into ac-

11 Memo to Maj.Gen. C.P. Gross from Brig.Gen. R.H. Wylie, 17 Aug. 1943.

12 Schedule showing Bolero buildup, prepared by the Planning Division, OCT, ASF, 29 Nov. 1943.

count the divisions which were to be transferred from North Africa to the U.K. as well as the U.S. troops which were to be transferred from Iceland to the U.K. It should be added that this schedule could not be maintained, partly because of delays in completing the conversion of vessels to serve as troop transports.[13] Consequently, it later became necessary to debark more than 200,000 U.S. troops in the U.K. during one month, namely that of April 1944, in an effort to achieve Bolero target strength.

The Quadrant Conference adopted a new cargo shipping program which recognized the validity of the British position that a cut was necessary in U.K. receptions of U.S. Army vessels during the months preceding preparations for outloading the Continental invasion force. The approved schedule is shown in the following tabulation:

Month	Total Army Cargo (Ship Loads)
Aug. 1943	81
Sept.	90
Oct.	104
Nov.	105
Dec.	125
Jan. 1944	143
Feb.	148
Mar.	109
Apr.	108
May	129
June	130

Of these scheduled sailings, the equivalent of 12 ships monthly, allocated by the U.S.A. to carry British import cargo, was to transport

13 By 3 October it was shown that the actual troop buildup in the U.K. had fallen behind Quadrant estimates for August and September to the extent of 118,764 troops. October estimates of the Movements Division, OCT, ASF, indicated that unless converted troop ships were made available more rapidly, by the end of February 1944 the Bolero troop buildup would be short an additional 780,000 troops. Memo to Brig.Gen. R.H. Wylie from Lt.Col. D.E. Farr, 4 Oct. 1943.

some U.S. Army cargo. Apparently, such an arrangement was justified by the effort to have all vessels sailing from the U.S. to the British Isles completely loaded, and also to take advantage of the possibility of distributing heavy cargo and balloon type cargo equitably among U.S Army and British allocated vessels. Such an arrangement, however, presented discharge difficulties for U.S. Army forces in the U.K. as later discussion will emphasize. It should be added that the shipping schedule noted above included the monthly dispatch of an average of four vessels which were to lift a total of 400,000 measurement tons of cargo for the U.S. Navy.

An indication that this shipping program could be carried through as planned was provided by the assurance that ASF would have sufficient cargo available monthly. Yet this assurance proved sanguinary, for not only was there occasionally a shortage of available cargo in the U.S., but also some of the services seemed to delay releasing cargo which apparently was available.[14] Such factors caused a revision of the Quadrant Conference schedule, and forced the adoption of a program which required the sailing of an unusually large number of vessels from the U.S. during April and May 1944, a number greatly in excess of the number which could be unloaded in U.K. ports. The resort to this expedient will be described later while discussing the preloading and commodity loading programs.

One of the decisions taken at the Quadrant Conference affected not only the amount of supplies available to ASF in the U.S. but the preshipment program as well. This was the matter of re-arming French divi-

[14] Memo to Brig.Gen. R.H. Wylie from Col. N.H. Vissering, 30 Dec. 1943.

sions, originally taken up in a positive form at the Casablanca Conference during January 1943. At the Trident Conference in the following May, it was agreed that 11 French divisions in North Africa would be equipped with supplies shipped from the U.S. in accordance with a definite schedule. This agreement was later modified. By the time of the Quadrant Conference in August 1943 a first group, or approximately four French divisions, had been equipped with shipments totalling about 250,000 measurement tons of cargo. Under the modified plan only five French divisions remained to be equipped before the end of 1943.

The Quadrant Conference renewed Allied approval for shipping the equipment for this force, equipment which also would amount to 250,000 measurement tons of cargo. However, this program was later modified, and approximately three of the five French divisions received their equipment from that which was left behind by the four U.S. divisions that were moved from North Africa to the U.K. This left only two French divisions which had to be supplied with new equipment from the U.S., but it still required at least 150,000 tons of cargo space. Meanwhile, new equipment for the transferred U.S. divisions was stockpiled in the U.K. under the preshipment program. Irrespective of changes, it may readily be seen that the French re-armament program drew heavily on the limited amount of equipment available in U.S. stockpiles.

Preshipment for ETO 1944 Troop Basis

The status of the preshipment program after August 1943 was subject to considerable improvement due to several factors. First, ASF reached a new agreement with the Ground Forces on the latter's training require-

ments, so that effective 26 July 1943 a larger amount of cargo would be made available for preshipment. A week later the Troop Basis was published for the Ground Forces destined for movement to the ETO during the first four months of 1944, and this list permitted definite planning for a continued preshipment program. Two weeks later the ETO Troop Basis was issued for service and Air Force troops, further aiding preparations for preshipment. These several troop lists provided for the buildup in the U.K. by 1 June 1944 of 20 combat divisions (13 of which were infantry, five armored and two airborne), and an appropriate number of service troops.

Publication of the more complete Troop Basis, in conjunction with the decision affecting strategy reached at the Quadrant Conference, made it possible to issue on 13 August 1943 a new directive covering preshipment of equipment and supplies to the ETO. On the basis of this directive, from 1 September 1943 through April 1944 it was possible to ship as preshipped cargo approximately 35 percent of all Army tonnage dispatched from the U.S. to the U.K. This amounted to a total of approximately 3,714,000 tons of cargo.

The effectiveness of the preshipment program was somewhat hampered, however, by the low priority accorded Bolero cargo, and by the heavy increase in the rate of troop embarkations for the U.K. The monthly rate of embarkations began to increase noticeably with October 1943. Although there was considerable variation, a fairly even flow was assured from that date through May 1944. This is reflected in the following table of troop embarkations in the U.S.:

October 1943	159,425
November	72,156
December	168,113
January 1944	124,561
February	190,290
March	138,177
April	131,856
May	132,110

The effort to obtain a higher priority for various types of Bolero cargo was associated with the inability to obtain in the U.S. release of many critical items, so that all the cargo necessary to supply the entire 1943 Troop Basis had not been shipped by 1 September 1943. The theater complained of delays in shipping this equipment and/or supplies, and indicated that in some instances equipment was arriving even after troop units had debarked.[15] In an effort to reinforce its request for a more rapid flow of materiel, the theater showed that the logistical factors which it used were in many cases appreciably lower than those set forth in the ASF instructions prepared for the theater in July 1943. The theater explained that this condition arose from its own supply experience, from the policy for bulk-shipping initial organizational equipment, and from the amount of local procurement. In view of the saving in shipping space that it was able to effect, the theater believed it was entitled to a more prompt receipt of the equipment and supplies which it needed.

The theater also pointed out that there existed in the U.K. a requirement for approximately 125,000 long tons of organizational equipment for troops scheduled to arrive in October, which was not yet received, including shortages of items for troops equipped to date with

15 Memo to The Adjutant General, War Dept., Wash., D.C., from Maj.Gen. J.C.H. Lee, 19 Sept. 1943; AG 400 x 381.1 (19 Sept. 1943) SOS GDS.

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shipments of materiel called for by operational projects and thereby released a larger amount of cargo with which to meet the shipping program.

Operational projects required the shipment of equipment and materials necessary for the fulfillment of various types of construction programs and other operations, scheduled for both before and after D-

By the end of October 1943 the War Department had approved projects calling for the shipment of 1,331,000 measurement tons of cargo, 800,000 tons of which were then scheduled for movement during the first quarter of 1944. At the same time another set of projects involving the movement of 740,000 tons of cargo awaited War Department approval. Prior to December 1943 the Army Service Forces had desired to ship some of the 800,000 tons scheduled for 1944 as quickly as possible, but had been prevented from doing so because of the low priority for the movement of operational projects cargo. Following a slight raise in the priorities for all ETO shipments during November, there was the 17 December approval of a new top priority on all ETO shipments, which, as previously mentioned, affected PROCO projects.

The delay in maintaining the Bolero cargo program had begun to alarm the Office of Chief of Transportation, ASF, as early as November

At that time the Chief of Ocean Traffic Branch, Water Division, pointed out that a very serious shortage of cargo existed for December loading.[16] This shortage, reinforced by the previous inability to meet monthly cargo target figures, raised a question as to whether or not the required amount of cargo could be made available in the U.K. in sufficient time to meet invasion requirements. In fact, the OCT wondered if

[16] Memo to Brig.Gen. R.H. Wylie from Col. N.H. Vissering, 11 Nov. 1943.

the delay in shipments would not make it necessary to revise tactical plans.

In order to underline the failure to maintain monthly cargo shipping schedules, the Water Division, OCT, called attention to a chart prepared by Headquarters, SOS, ETOUSA, which indicated that a total of 6,480,510 measurement tons of Bolero cargo should be shipped during the second half of 1943. It also mentioned a 3 August Planning Division, OCT, schedule, which indicated that a net total (without broken stowage) of 5,393,000 measurement tons of cargo should be shipped during the last half of 1943, if the Transportation Corps was to meet the shipping requirements for planned operations. Apparently the differences between these two sets of figures was based on OCT information on the supposed availability of cargo, or the availability of shipping space. In any case, since the program was not being carried out, periodically the Planning Division, OCT, had drawn up successive revisions of its chart, each time showing the backlog of cargo that was being built up. By 11 November 1943, according to Planning Division, OCT, this backlog amounted to 574,600 measurement tons of cargo, although according to Headquarters, SOS, ETOUSA, the total was 2,022,110 tons. The Water Division, OCT, suggested that a study be instituted as to the cause for this continuous failure to meet monthly cargo targets, in order to take proper corrective action.

This timely warning had no appreciable result in terms of improving monthly shipments, at least through February 1944. There was a continued failure to meet monthly targets, and as the time for D-Day drew near, it became evident that drastic steps were necessary to deliver

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ships' turnaround time, which then averaged 30 days.[17]

Consideration of this prestowage plan became merged with a study for providing the theater with additional quantities of ammunition. The study concerned a distinct type of loading called commodity loading, that is the filling of each vessel with one type of cargo, or with cargo for one service. Consequently, Brig. General Ross' proposal was modified to provide a new plan whereby 54 ships would be utilized for prestowing, 11 of which would contain only ammunition. The General Staff, War Department, approved this revised prestowage plan on 3 March with the understanding that the vessels would be dispatched in serial during April, May and June. Actually, the first sailings were in May when 19 prestowed ships left U.S. ports, and these were followed by 22 vessels in June and 13 in July. These sailings completed the prestowing program, although commodity loading continued throughout the European campaign. As the result of the prestowage program, in addition to the regular monthly Bolero program, total sailings from U.S. ports for the U.K. carried 2,033,987 tons of cargo during May; 1,815,145 tons during June; and 1,912,878 tons during July.

Anticipating discussion in a later chapter, it may be observed that filling U.K. waters with American vessels, many of which had to wait on tactical developments on the Continent, presented the possibility of creating an unwieldy and wasteful backlog of ships awaiting discharge. This situation actually developed at a time when the world-wide demands for Allied shipping could not be fully met, so that drastic steps be-

17 The 53 ships would carry a total of 484,000 measurement tons of cargo, but some of this would be deckloaded, and apparently the deck loads were to be discharged at U.K. ports.

came necessary in the fall of 1944 to lower ship turnaround time in the ETO, and to reduce the heavy backlog. However, pre-D-Day planning had anticipated retention of 142 American ships in the U.K. for operational use within the theater.[18] One hundred of these vessels were to be specially fitted in the U.S. with ballast, flooring and adjustable rigging, in order to enable them to serve for transporting vehicles between the U.K. and the Continent. These vessels were termed motor transport vessels (MTVs) because they were intended as motor transport carriers. The conversion of vessels to MTVs was accomplished in the theater, as later discussion will show.

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18 Memo to C.G., NYPE, et al, from Col. R.M. Hicks, Ch/Water Division, OCT, ASF, 19 Feb. 1944.

IV. U.S. PREPARATIONS IN THE U.K. FOR OVERLORD (PART I)

The responsibility for receiving and distributing in the British Isles the increasingly heavy shipments of Bolero personnel and cargo in 1943 and 1944 belonged largely to the Transportation Corps in the European Theater of Operations. This organization, as described above, was established in the summer of 1942 and was maintained throughout the period of the North African campaign despite a heavy drain of officers and T.C. units. In fact, it had even enlarged the scope of its activity during that period by taking over from Sea Transport the responsibility for outloading American troops and supplies, and by receiving control of the Military Railway Service from the Corps of Engineers.

Meanwhile, the decision to resume preparations for a cross-Channel assault foreshadowed a tremendous expansion of T.C. activity. The official responsible for directing this activity was Colonel F.S. Ross, who returned to London after he had set up an organization to handle U.S. Army transportation activities in North Africa. Leaving the latter area during February 1943, Colonel Ross first conferred with military leaders in the U.S. and then during the following month returned to the U.K. to resume his duties as theater Chief of Transportation. His experience in North Africa, as well as his former services in the U.K., were to prove invaluable in accomplishing successfully the great transportation assignment that lay ahead.

The three major fields of activity with which Colonel Ross (subsequently advanced to the rank of Major General) was concerned included, first, the Bolero buildup of forces, equipment and supplies; second, the

U.K. phase of Overlord planning which concentrated on the outloading of cargo and the marshalling and embarking of troops and equipment; and finally, the planning for the Continental phase of Overlord with particular attention to the support of what was called Operation Neptune, that is, the activities which were concerned with the assault and immediate buildup phases of U.S. Army operations on the Continent.[1] The Neptune phase was scheduled to extend from D-Day to D plus 41.

In addition to the planning activities in connection with transportation requirements and the implementation of those plans, the Transportation Corps in the ETO was responsible for the technical supervision of traffic control under the Assistant Chief of Staff, G-4, SOS, of those installations and commands which were authorized to have a general staff. These installations included the Service of Supply, ETO (later redesignated the Comzone, ETO); the Advance Section of Comzone, a unit assigned to take over control of supplying the Armies following the initial assault phase; the Forward Echelon of Comzone, a unit which was to succeed the Advance Section (ADSEC) in control of continental supply operations as ADSEC moved forward behind the Armies; and base sections in the U.K., as well as those which ultimately would be established on the Continent under the control of Comzone.

The Transportation Corps also was responsible for the operation of ports of embarkation and debarkation in the U.K. and, later, on the Continent. It was assigned control of the operation of military railways in both areas in support of U.S. Army movements, and of inland waterways.

[1] Report of the General Board, USFET, Operation, Organization, Supply and Services of the T.C. in the ETO, Transportation Section, Study #122, p. 8.

Finally, it was made responsible for the operational control of motor transport. In other words most of the principal forms of transportation, other than air transport, were technically under the control of the Chief of Transportation within the SOS, later the Comzone. About the only element that was lacking was actual command, that is, the ability to move transportation organizations freely enough to meet local situations, and changing requirements when such action would benefit the whole plan. This status of the T.C. meant that there were no exempt commands corresponding to the Ports of Embarkation in the zone of interior, for full authority over U.S. operated ports in the British Isles was accorded the base section commanders under the Headquarters, SOS.[2]

The central organization of the Transportation Corps, the OCOT, which handled these transportation assignments, was rebuilt during the summer and fall of 1943 around the nucleus which remained in the U.K. during the North African campaign. There was a decided increase in the number of officers and personnel attached to the OCOT, SOS, and the number of Divisions which were activated to handle special types of operations. This personnel and these Divisions were subjected to appropriate assignment or reorganization within the structure of the OCOT during the period prior to D-Day.

By 1 January 1944 the divisions of the OCOT showed a marked variance from the simple type of organization originally established in May 1942. In addition to a Chief of Transportation, who was assisted by an administrative assistant and a control division, there was a deputy chief of transportation and the following staff officers: assist-

[2] Ibid, pp. 1 and 2.

ant chiefs of transportation for administration, planning, movements, marine operations, supply, motor transportation, and military railways. The OCOT supervised the work of various operating units which included the ports of embarkation, traffic regulating groups, railway grand divisions (and subordinate railway units), base depot companies, Quartermaster motor transport units assigned to the T.C., and amphibian truck companies.

The relative importance of the work of the various divisions under the several assistant chiefs of transportation is difficult to assess. All division heads were concerned with vital planning tasks, though in this field the Assistant Chief of Transportation for Planning stands out as most important. For operations in the U.K., however, the work of the Movements and Marine Operations Divisions were perhaps most significant. A specialized type of work which was required of the OCOT is exemplified by the number of branches that were set up in the Movements Division. These branches, whose activities will be described later, consisted of the Operations Branch, the Regulating Branch, the Freight Branch, the Perishable Freight Branch, the Passenger Branch, the Highway Branch and the Training Branch. Not all of these branches had been activated at the same time, for each had come into existence as the need for it arose.

In July 1943 it had been estimated that the OCOT would require ultimately a staff of approximately 500 men. A slow growth in the size of the staff occurred during the following period, but it eventually was cut back, largely due to the demands for experienced transportation personnel in various agencies set up to handle supply operations on the

Continent.[3] This topic will be dealt with more fully below, but it is significant that by 1 June 1944 there was a total of 104 officers and 125 enlisted men in the OCOT. By way of contrast, at the close of the European campaign, that is on 1 May 1945, the staff of the OCOT consisted of 231 officers and 839 enlisted men. Of this personnel, 145 officers and 544 enlisted men were attached from other units.[4]

Among the important factors which affected the responsibilities of the OCOT during the Bolero period was the theater reorganization on 27 May 1943. On that date, Maj. General Lee, in addition to his existing duties as Commanding General, SOS, assumed the duties and functions previously performed by the Assistant Chief of Staff, G-4, Headquarters, ETOUSA.[5] The latter office was discontinued. This reorganization removed one echelon from a position superior to the Chief of Transportation, although, of course, it still left that officer responsible to the G-4 office, SOS. The relationship between these latter two organizations was to have an important bearing on operations on the Continent, and not until approximately 1 January 1945 were the respective duties of each regarding the control of shipping and inland transportation movements satisfactorily adjusted.

Even with his official position assured as the head of a special staff section, the Chief of Transportation was subject to many influences which affected his overall responsibility. One handicap arose from the absence of official doctrine as to the work he should perform.[6]

3 Personal letter to Maj.Gen. C.P. Gross from Brig.Gen. F.S. Ross, 10 Nov. 1943.

4 Report of the General Board, USFET, Study #122, p. 8.

5 General Order #33, Headquarters, ETOUSA, 27 May 1943.

6 Personal letter to Maj.Gen. C.P. Gross from Brig.Gen. F.S. Ross, 10 Nov. 1943.

Other handicaps grew out of the Army's prewar unpreparedness for large scale undertakings, and the lack of available qualified personnel who could handle Army transportation matters effectively. Some aid along these lines was obtained from experiences gained in North Africa and from the study of transportation activities during World War I, but still a great deal had to be done to insure effective centralized control of transportation and to obtain and train the units necessary to carry on transportation activities during the European campaign of World War II. In this connection the necessity for some new transportation units such as harbor craft companies and T.C. depot companies, or the promulgation of tables of basic allowances for existing transportation units that lacked such tables, was the particular burden on the Office of the Chief of Transportation.[7]

As previously indicated, control of air transport in the theater lay in the hands of the Commanding General, SOS, and the Air Transport Command. This latter agency later was superceded by an Allied agency which carried on similar functions in the operation of air transport carriers. A special Priorities Board was set up to allocate air tonnage allowances to the Air Forces, Ground Forces and Service Forces. The Chief of Transportation did not participate in the work of this board. Parenthetically, it may be noted that the U.S. Chief of Transportation, AFHQ, North African Theater of Operations, played an important part in determining the allocation of priorities for movement of Army goods by air in his theater.

The Chief of Transportation, SOS, did not retain control of the

7 Personal letter to Maj.Gen. C.P. Gross from Col. F.S. Ross, 18 May 1943.

movement of petroleum products as had been contemplated in 1942, for that field of activity became the concern of an Area Petroleum Service within the SOS.[8] For a time, the control of motor transport activities was removed from the T.C., although by the summer of 1943, as later discussion will emphasize, this field of transportation was returned to the OCOT.

Occasionally the responsibilities of the OCOT developed from demonstrated ability to perform a given task successfully. For example, during May 1943, it was considered that beach parties in landing operations were concerned with a tactical operation in which the T.C. should have no part.[9] Colonel Ross believed that a port headquarters and appropriate transportation troops should be included in such a party, and he learned from the Navy that it had neither the personnel nor experience for unloading ships in amphibian operations. He pointed out that operations in North Africa justified the contention that in the final analysis, the T.C. was required to unload ships, and that it landed practically all cargo from the start of that operation. However, because the initial operations at a landing beach required the services of the Corps of Engineers and because the Engineer Special Brigades had been so successful in landing operations at such beaches as those in Sicily and in the Pacific, overall control of beach operations in Normandy was assigned to the Corps of Engineers. For projected operations at one of the beaches a T.C. port headquarters was attached to an Engineer Special Brigade Group, and for both projected American beaches, T.C. port and

8 General Order #33, Headquarters, ETOUSA, 27 May 1943.

9 Personal letter from Col. F.S. Ross to Maj.Gen. C.P. Gross, 18 May 1943.

amphibian truck companies were assigned to Engineer Special Brigades, so that Colonel Ross only partially achieved the position he desired for T.C. units in beach operations.

Outloading the assault and follow-up forces for cross-Channel operations also initially was considered part of the tactical operations, and was not the concern of the T.C. Colonel Ross obtained the opportunity to demonstrate the T.C.'s ability to perform this work, however, and during a trial operation, the T.C. was able to secure the loading of approximately 100 vehicles on an LST in 30 minutes, and their unloading in four.[10] This record was superior to what other agencies had calculated as possible and it convincingly demonstrated the superiority of T.C. methods. As a result, the T.C. was assigned responsibility for the tremendous outloading preparations that were undertaken under the direction of tack force commanders.

T.C. Relations with WSA and the Air Forces

The OCOT also had to work out transportation responsibilities with the WSA and the U.S. Army Air Forces. At one time, there was a suggestion that the WSA take over the responsibility for handling U.S. Army cargo received in British ports on WSA vessels carrying primarily British lend-lease cargo.[11] It should be noted that Colonel Ross previously had achieved a satisfactory understanding with WSA representatives in the U.K., and this fact may have determined the decision to drop plans for WSA port operations in the U.K. During 1943 the U.S. Air Forces in

10 Ibid.

11 Personal letter to Maj.Gen. C.P. Gross from Brig.Gen. F.S. Ross, 10 July 1943.

the British Isles were receiving particularly large shipments of cargo in order to carry out their pre-D-Day preparations for the assault on the Continent. In order to offset the inclination of the Air Forces to establish a separate transportation service of their own, and in order to maintain centralized control of all incoming shipments of U.S. Army cargo, the OCOT, supported by the Chief of Transportation in Washington undertook to meet Air Force requirements as promptly and as efficiently as possible.[12] In furtherance of this aim, the T.C. took special pains to handle promptly Air Corps shipments arriving in the U.K. with poor marking; with extra trouble, discharged Air Corps cargo from vessels carrying some British cargo; and erected special structures on the decks of oil tankers to carry assembled planes. The Transportation Corps in ETO also secured the aid of the British Admiralty for effecting improvements at the ports of North Ireland so that the discharge of U.S. Army aircraft could be expedited. Along with this effort came the construction of a special rig which facilitated the movement of aircraft from the ports to appropriate airfields in North Ireland.[13] Undoubtedly such efforts made it possible to retain centralized control in the T.C. of all incoming U.S. cargo.

Fulfillment of the T.C. responsibility of planning transportation activities in the theater was achieved in the face of a number of difficulties. Despite urging from Army Service Forces headquarters in the U.S. and the willing compliance of the Commanding General, SOS, the Chief of Transportation did not always find it easy to obtain appoint-

12 Ibid, 8 June 1943.

13 The Story of Transportation in the U.K., p. 35; and History of the T.C. in the ETO, Vol. II, p. 52.

ments of his representatives to the various agencies concerned with planning for Overlord.[14] Perhaps this difficulty resulted from the newness of the T.C. and the failure of higher planning agencies to appreciate the significance of transportation in projected operations. Judged by the planning for motor transport activities and the activities of the Engineer Special Brigades, in preparation for beach operations, it is evident that occasionally the T.C. was not called upon for its support until the eleventh hour. Some of the results of such developments will be considered later in this monograph.

Transportation experiences in the North African Theater, if followed in the European Theater, might have had serious repercussions on the work of the OCOT. The fact that German resistance held out longer in Tunisia than had been anticipated resulted in vigorous efforts to increase the amount of Army cargo moved by railroad in North Africa. To further this end, during January 1943 an urgent cable was dispatched to the United States to send to North Africa, Brigadier General C.R. Gray, Jr., the General Manager, Military Railway Service. The importance of his projected assignment led to the appointment of Brigadier General Gray as Director, Military Railways in the Allied Force Headquarters (AFHQ) staff. Such a position was considered necessary because the assignment involved control of Allied railway operations, but it meant that as an American officer, the Director General, MRS, held a position in an equal echelon with (and therefore was not responsible to) the Chief of Transportation (U.S.), AFHQ, NATOUSA. More specifically, Brig. General Gray was responsible to a British general staff officer

[14] Personal letter to Maj.Gen. C.P. Gross from Col. F.S. Ross, 18 May 1943.

called the Chief Administrative Officer, and it was this arrangement (which it must be emphasized, developed from unforeseen requirements, though at the same time, in accordance with British Army organization), that led high-ranking U.S. officers concerned with Overlord planning to project a similar setup in the European Theater.

During February 1944, that is, following the appointment of General Eisenhower as Commanding General, Allied Forces, and the establishment of his SHAEF Headquarters, General Eisenhower's Chief of Staff, Lt. General William B. Smith, desired to duplicate the North African organization at SHAEF, at first only as it affected shipping and movements. To achieve this end, he sought the transfer of Brig. General G.C. Stewart, Chief of Transportation (U.S.), AFHQ, NATOUSA, to London to serve under the Chief Administrative Officer, SHAEF.[15] Lt. General Somervell strongly objected to such an arrangement, first because he believed that projected activity in the Mediterranean would require Brig. General Stewart's remaining there, and because he believed that all personnel for handling transportation matters in the European Theater should be d: from Maj. General Lee's staff in order to achieve the greatest possible unity there.

This protest apparently was effective, because Brig. General Stewart remained in the North African Theater until he acc lied the Allied forces invading southern France and later joined the OCOT, Comzone, ETOUSA. About two months after the consideration of the foregoing proposal, SHAEF again attempted to modify the overall transportation picture in the theater. In this instance, Lt. General Smith endeavored to

15 Letter to Maj.Gen. J.C.H. Lee from Lt.Gen. B. Somervell, 21 Feb. 1944.

set up a Director General of Railways in the SHAEF staff under a British officer. He also desired to transfer Brig. General Gray from North Africa. Again Lt. General Somervell objected strongly. He believed that it was fundamental that there should not be a railway service separated from and not integrated with other transportation functions. He also believed there should not be operational functions in both the SOS and SHAEF.[16]

Lt. General Somervell stated that in the ETO "there is now a strongly integrated T.C., probably the best organization in that respect of any theater in the world." This belief undoubtedly accounts for his reluctance to see a split in the T.C. in the ETO, and his reluctance to see the control of U.S. transportation activities placed in British hands. In regard to the former point, Lt. General Somervell believed that adopting the World War I type of organization of a separate rail service should be avoided at all costs. His solution was that Lt. General Smith raise Brig. General C.L. Burpee, Director, 2nd Military Railway Service, to a higher rank and place him on the SHAEF staff, while at the same time leaving Brig. General Burpee to continue to head rail operations under Maj. General Ross. It should be explained that Brig. General Burpee had arrived in London in March 1944 as the head of the 2nd Military Railway Service, and was assigned to operate on U.S. military railways on the Continent following D-Day. Lt. General Somervell believed that Brig. General Gray should remain in the position which he then occupied, and be brought into the European Theater after the

16 Letter prepared for Lt.Gen. Wm. B. Smith by Lt.Gen. B. Somervell, 10 Apr. 1944. This letter was not dispatched to Lt.Gen. Smith but instead Maj.Gen. Gross was sent to confer with him.

Allied invasion of southern France had been undertaken.

Lt. General Somervell's suggestions were presented to Lt. General Smith in a personal conference by Maj. General Gross, and led to the adoption of Lt. General Somervell's suggestions with modifications. Instead of appointing Brig. General Burpee to a SHAEF position, Colonel Appleton was brought from the China-Burma-India Theater and given the position of Director General, Military Railways in the G-4 Division, SHAEF.[17] He was made responsible for recommending general railway policies, the overall planning for technical development and operation of military lines of communication in the zone of operations, staff supervision of railway construction, maintenance and operation, and recommendations for allocation and reallocation of railway resources, both material and personnel.[18] While this arrangement seemingly bypassed Maj. General Ross' staff, actually it had provided for close coordination of SHAEF and the OCOT railway activities, because Colonel Appleton, prior to his railway experience in the CBI Theater, had served in the Rail Division, OCT, ASF, where he had assisted in planning railway operations in the European Theater.

Colonel Appleton established close relations with Maj. General Ross and insured coordination between the Allied forces railway units. He organized only a small staff with transportation, mechanical, stores and engineer sections, because he believed that there was no need for

17 Later a G-4 Movements and Transportation Section was added to SHAEF, similar to the organization in the North African Theater. Although it is known that this staff section dealtdirectly with the Movements Division, OCOT, a record of "Mov. and Tn." has not come to the attention of the author of this monograph.

18 Administrative Memo #12, SHAEF Headquarters, 7 May 1944.

an elaborate organization.[19] It is interesting to note that not until 8 December 1944 was Colonel Appleton made a general officer. Meanwhile, he had been somewhat handicapped by his lack of rank, particularly in dealing with officers of Allied nations.[20]

The size and responsibility of the OCOT was also affected considerably by British assistance in transportation matters. Initially the British operated all ports receiving U.S. troops and supplies and throughout the Bolero period they operated all British mainline railroads. This work was supplemented by the British loan of manpower and equipment and the furnishing of a large amount of supplies. In addition to clerical aid for the OCOT, there were British drivers of motor cars, British stevedore workers, movement control personnel and other types which rendered valuable assistance in fulfilling the T.C. mission. The British contribution of supplies not only aided in the buildup of cargo for use on the Continent, but naturally reduced the amount of cargo which had to be shipped from the U.S., discharged at British ports and distributed to depots and camps.[21] The amount of the British supplies and services will be considered later in the discussion of British reverse lend-lease activities.

Expanding Activities at British Ports

The Irish, western English, Scottish and Welsh ports which had

19 Personal letter to Maj.Gen. C.P. Gross from Col. J.A. Appleton, 15 May 1944.

20 Ibid, 9 December 1944.

21 During the fiscal year 1943, 1,500,000 measurement tons of material, in addition to a large quantity of construction materials, were provided by the British to the U.S. forces in the U.K. Advance copy of the Biennial Report of the Chief of Staff, U.S. Army, to the Secretary of War, July 1, 1941, to June 30, 1943, Note 5.

played prominent parts in the 1942 buildup of American forces became inadequate to handle the increasingly large traffic which began to flow to the U.K. in the summer of 1943. Consequently, during July of that year the eastern British ports of Hull, Immingham and London and the southern ports of Southampton and Plymouth were opened to receive U.S cargo. At that time Brig. General Ross' office did not have sufficient personnel to establish port headquarters in these areas, and occasionally temporary assignments of inexperienced personnel were required, as when from the middle of April to the middle of July 1943, the regional traffic office at London acted as a port headquarters.[22] The office contained no personnel trained for port operations, but it established, nevertheless, a creditable record in discharging cargo. Fortunately, the office was able to resume its original duties by July because the increase in the number of available mobile port headquarters then made it possible for the 14th Port to take charge of American port operations at London and other east coast ports.

By 1 January 1944 six American mobile port headquarters were operating in the U.K. During the first quarter of that year, four additional port headquarters arrived.[23] This increasing number made possible the consolidation of the work of the existing headquarters, but it also involved a considerable amount of shifting of Headquarters from one port area to another. Coincident with the shifts was the withdrawal of two mobile ports, namely the 4th and the 11th, to prepare for subsequent activities on the Continent. The 11th Port was assigned to future beach

22 The Story of Transportation in the U.K., p. 102.

23 History of the T.C. in the ETO, Vol. II, pp. 46ff.

operations at Normandy, including the operation of minor Normandy ports, and the 4th Port was to prepare to take over U.S. port operations at Cherbourg.

Shifting mobile port headquarters in the U.K. also was accompanied by a number of administrative changes, and all of these factors proved to be somewhat of a handicap to efficient operation. Nevertheless, by 1 April 1944 the 10 mobile ports then available in the U.K. had received more or less fixed assignments as follows: the 7th Port operated in North Ireland and the 5th Port continued to operate in the Clyde Area; the 12th Port, which had received a temporary assignment at Hull, was moved to London by 1 February 1944; the 13th Port was operating at Plymouth where it had taken over an assignment from a detachment of the 14th Port; the 14th Port itself was placed in charge of Southampton and several sub-ports, where it was to accomplish a vital role in the build-up of U.S. forces on the Continent; the 15th Port took over operations in the Mersey Area, relieving the 4th Port for the assignment noted above; and the 16th and 17th Ports operated in the Bristol Channel where they took over from the 11th Port that had become attached to the Engineer Special Brigade Group that was to handle supply operations on Omaha Beach. Just prior to 1 April 1944 all the mobile ports were reorganized under new tables of organization, a reorganization which reduced the size of their staffs from 579 to 519 personnel.[24]

Of equal, if not greater, importance in handling incoming troops and supplies was the furnishing of port troops to assist British labor. British labor unions had been reluctant to surrender their control in

[24] Ibid, p. 49.

discharging all cargo in the U.K. and the British Ministry of Labor had supported them in this position. Nevertheless, Army Service Forces Headquarters in the U.S. had foreseen the need ultimately for supplementing this British labor, which was composed of older British men and which had been reduced in number by the drain of many men into the British armed services. Furthermore, there was the American feeling by the employment of equipment which American forces could supply their own port troops, operations in the U.K. could be materially speeded up. Despite ASF foresight, it was not easy to obtain OPD approval for the formation of what ASF considered enough service units, not only for the U.K. but for other theaters of operation as well. However, some British authorities also foresaw the need for the employment of American port troops and they were able to assist ASF in obtaining higher priority for service troops from the Combined Chiefs of Staff.[25] Even with this approval, there was still a question of obtaining authority to activate the troops, and the problem of distributing those which were authorized equitably among the overseas theaters.

During July and August 1943 some of the port troops scheduled for movement to the U.K. received a new assignment in answer to an urgent request for service troops from the North African Theater.[26] Furthermore, the demand for troop transports to carry all types of Army personnel to North Africa occasionally led to cuts in the number of service troops which could be carried according to schedule to Great Britain. For example, during August 1943 there was a reduction in the number of

25 Personal letter to Col. F.S. Ross from Maj.Gen. C.P. Gross, 27 May 1943.

26 Ibid, 14 July 1943.

personnel to be embarked in the U.S. for the U.K., from 103,000 to 50,000, and this reduction had a serious adverse effect on the timely movement of port troops to that destination. This occurred at the time that the OCT, ASF, was endeavoring to dispatch 15 port battalions to the European Theater by 1 January 1944.[27]

The OCT, ASF, program had been drawn up in response to the British Ministry of Labor admission in July 1943 that the number of available British stevedores was inadequate to handle the incoming flood of cargo. At the same time, the latter office had requested dispatch of 2,500 stevedores from the U.S. at once. In reporting this change of policy, Colonel Ross estimated that 15 U.S. port battalions would be necessary. He was able to show not only that the shortage of British stevedore personnel was delaying the discharge of cargo from U.S. vessels, but that also the increasing war weariness of British port labor was reflected in a 17 August strike at Liverpool. At that time, the OCOT had one U.S. port battalion in the British Isles, and various detachments of it were stationed at Manchester and the Bristol Channel ports.

In response to the change in official British attitude and despite handicaps to fulfilling a programmed shipment, by 21 October 1943 there were six U.S. port battalions in the British Isles. This number was later greatly increased, so that just prior to D-Day there were 25 port battalion headquarters and 113 port companies operating at British ports or preparing for future operations on the Continent.[28]

Brig. General Ross had exerted all possible effort to obtain these

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27 Ibid, 28 July 1943.

28 History of the T.C. in the ETO, Vol. III, Chap. XIV, p. 1.

port troops as rapidly as possible. In endeavoring to meet these demands, this and other types of transportation troops occasionally were embarked from the U.S. before they were fully trained. As a consequence, it was necessary to complete their training in the U.K. In one respect, such training was facilitated by the previous British agreement to permit American troops to train alongside British dock workers, but at the same time their officer personnel did not meet all specifications, and some shifts of officers became necessary. When Brig. General Ross complained of the quality of some of the transportation troops sent him from the U.S., he was reminded that meeting his urgent requests as promptly as possible occasionally had led to dispatching any personnel available without the possibility of shifting them on the basis of experience and training.[29]

Various factors contributed to occasional port congestion in the U.K., particularly during the months preceding D-Day. Strenuous efforts in the assignment of vessels to ports which could handle their loads periodically was unable to prevent such situations. An example of port difficulties was furnished by the arrival of a large troop convoy during January 1943.[30] Personnel in this convoy were destined for various camps in the U.K., and even the personnel on one ship required distribution to ports as far apart as North Ireland, the Clyde Area, and southern England. Consequently, considerable transhipment of personnel became necessary, and several vessels were obliged to call at more than one port. A graphic illustration of how the personnel of one

29 Personal letter to Brig.Gen. F.S. Ross to Maj.Gen. C.P. Gross, 14 July 1943.

30 History of the T.C. in the ETO, Vol. II, p. 16.

convoy was distributed is shown in the accompanying diagram.

Among the various steps which were taken during 1943 and 1944 to avoid port congestion and facilitate handling of incoming cargo in the U.K., were: the continued efforts to improve the systems of marking, packaging and manifesting; the attempt to assign cargo to one of three regions in the U.K.; the effort to avoid shipping "balloon" cargo on WSA vessels; and the plan to load individual ships with cargo destined for the depots of various services in order that transit lines from a port to a particular depot would not become heavily congested. The efforts to improve marking, packaging, and manifesting, and to insure the timely dispatch of cargo cables for ETO shipments, had produced some beneficial results in 1942, but necessarily they continued in the following year with increasing benefit to the handling of U.S. military cargo. These improvements produced some differences between the theater and the zone of interior as to the best methods to be pursued, although by 1944 differences had been reconciled and the entire system was operating satisfactorily.

During January 1942 the War Department adopted a temporary system of marking, and then six months later, it authorized each theater to work out and adopt for itself a more satisfactory marking system. On the basis of this authority ETO prepared and adopted on 20 January 1943 what was called "Ugly" system of marking, which showed a code name for the theater, the service requisitioning the supplies, the class of supplies requisitioned and the requisition number.[31] This system was sometimes referred to as the Bobo system because of the sample theater code

[31] Cargo Shipping Problems in Mounting the European Invasion, op.cit.

D SPOS T ON OF TROOPS ON CONVOY UT3, AT68, AT69

17 - 21 OCTOBER 1943

RESTRICTED

BIGGEST CONVOY COMES IN!

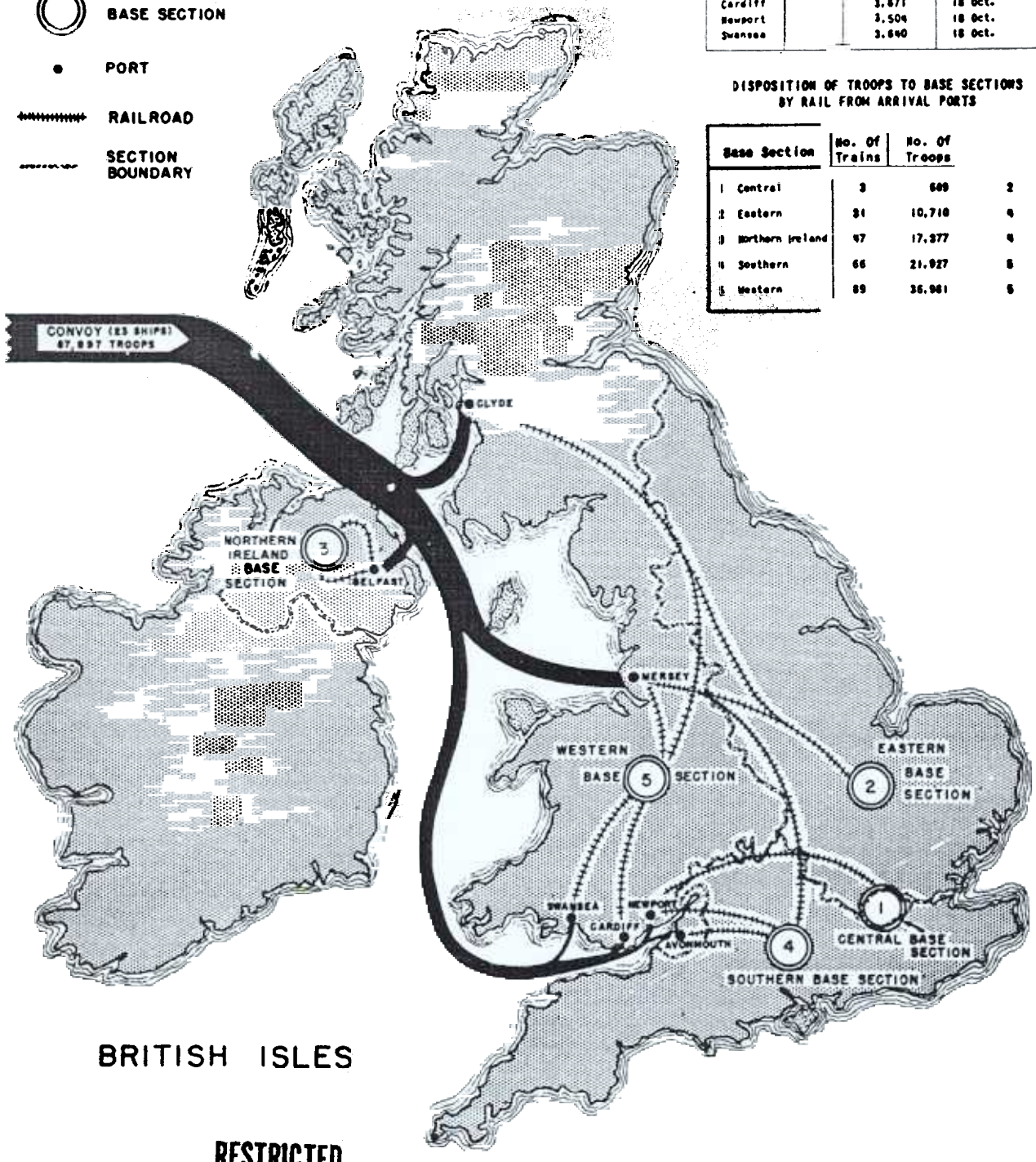
DISPERSED BY PORTS

CONVOY ARRIVAL

Port	No. Of Ships	No. Of Troops	Date Of Arrival
Belfast		13,883	18 and 19 Oct.
Clyde		27,331	17 and 18 Oct.
Mersey		33,119	17, 18 and 19 Oct.
Bristol			
Avonmouth		2,739	18 and 19 Oct.
Cardiff		3,671	18 Oct.
Newport		3,504	18 Oct.
Swansea		3,640	18 Oct.

DISPOSITION OF TROOPS TO BASE SECTIONS BY RAIL FROM ARRIVAL PORTS

Base Section	No. Of Trains	No. Of Troops	
1 Central	3	609	2
2 Eastern	31	10,710	4
3 Northern Ireland	47	17,377	4
4 Southern	66	21,927	8
5 Western	89	36,981	5



BRITISH ISLES

RESTRICTED

name suggested by way of illustration. A representative marking might be written: Bobo (name of the theater) - Q.M. (service requisitioning the supplies) - II (class of supplies requisitioned) - AD07 (theater requisition number).

The Army Service Forces raised certain objections to this ETO system, particularly because it believed that the theater SOS was seeking to obtain information of too detailed character for the purpose of facilitating its own depot operations. Carrying out the system was thought to involve more work than was necessary for prompt and efficient handling of cargo in the U.S. ASF officials also pointed out that the OCT, ASF, was at that time endeavoring to improve the type of manifests used and that the NYPE was adopting a shipping cycle or deadline system of handling requisitions. After a certain amount of trans-Atlantic discussion, resulting in some modifications of the Ugly system, it was adopted by the War Department during March 1943.

Meanwhile the OCT, ASF, continued its efforts to perfect the shipping cycle system and to improve the character of manifests for cargo destined for the U.K. During the late summer of 1943 an improved War Department shipping document also was adopted, and by the fall of that year the entire system of requisitioning, marking, and shipping became known as the "ISS" system. In other words, the system that came to serve satisfactorily the purpose of the ETO as well as other theaters, resulted from the combination of suggestions emanating from the ETO and the zone of interior. There were still, however, some improvements necessary in the manner in which certain individual services marked particular items. This was true particularly for certain types of Air Corps

cargo and certain Ordnance items such as tanks.[32]

During the discussion on the marking and requisitioning problems, the ETO suggested loading ships, in so far as possible, with definite types of cargo for particular areas, in order to reduce the amount of cross hauling in the U.K. The theater planned to establish three zones one each in central and southern England, and one in North Ireland, giving them the code names respectively of Soxo, Glue and Bang. Ships loaded with Air Force and construction materials were to go to the North Ireland (Bang) zone. Ships loaded with Ground Force supplies were to go to the southern (Glue) zone. The Middle zone, Soxo, was to receive mixed cargo. Requisitions from the U.K. were to indicate the zone that was desired for the cargo, and the NYPE was to attempt to stow individual ships only with cargo destined for one of the three zones.[33] The system was put into effect during the summer of 1943, but reports from the theater indicated that there was some difficulty in making it effective. By August 1943, however, definite improvement was noted in the manner in which this zone system was carried out.[34]

Continued complaints from the theater caused the OCT, ASF, and the NYPE to make special efforts during May 1943 to insure the prompt dispatch of cargo ships' manifests and cargo shipping cables to the U.K. In part, delays in dispatching these documents or this information resulted from inadequate communication between the U.S. and Great Britain. Following the Signal Corps' installation of additional communication

32 Report to C.G., NYPE of a visit to ETOUSA, prepared by Maj. T.J. Mooney, 4 Aug. 1943.

33 Letter to Brig.Gen. R.H. Wylie from Col. N.A. Ryan, 27 Mar. 1943.

34 Memo to Brig.Gen. W.N. Goodman from Col. I.K. Evans, 8 Aug. 1943.

facilities and an energetic effort to dispatch manifests by air, improvements in the reception of the desired information became noticeable in the U.K. There was a corresponding effort to improve the system of packaging cargo shipped to the U.K. from NYPE, and during the summer of 1943 constant progress was achieved. Even as late as August 1943, however, the theater reports noted that further improvement was still possible.[35]

During April 1943 the OCT, ASF, reached an agreement with WSA to exchange some of the light but bulky or balloon type Army cargo, of which there was an abundance available, for heavy, compact, British lend-lease cargo scheduled for shipment on WSA vessels allocated to the British.[36] Through the agreement the Army received space for the equivalent of 12 shiploads of Bolero cargo. When it went into effect it quickly developed that general type Army cargo frequently was substituted for the large bulky items such as assembled aircraft. Colonel Ross protested vigorously against the seeming abuse of the agreement, and Maj. General Gross acknowledged that he had not intended to have general cargo included in such shipments, and he made an effort to minimize the practice.[37] The difficulty in meeting Colonel Ross' objections, however, was that in order not to waste shipping space, it was considered necessary to dispatch from the U.S. any type of available cargo on vessels sailing to the U.K., and so the practice could not be corrected immediately.

35 Ibid.

36 Memo to A/COT for Water Activities, ASF, from Col. N.H. Vissering, 17 Nov. 1943.

37 Personal letter to Maj.Gen. C.P. Gross from Col. F.S. Ross, 1 June 1943; and reply, 8 June 1943.

Another complication in connection with the agreement developed from the gradual change in the type of cargo carried on both Army and British allocated WSA vessels. During June and July an increasing number of tankers were equipped to transport assembled aircraft, thus making less bulky Army cargo available for WSA cargo vessels. Simultaneously, there was a decline in the amount of heavy type British lend-lease cargo for carrying on British allocated WSA vessels, and the OCT, ASF, believed that the April agreement should be modified.[38] This proposal was seriously considered during November 1943, and the resulting discussion led to some adjustments in the allocation of Army and British lend-lease cargo. But in essence the agreement continued in effect throughout the following year.

Another shipping policy intended to facilitate port and inland transportation activities in the U.K. was suggested by the receipt of a large amount of cargo assigned to a particular service, in one convoy, or on one vessel. Such shipments created rail delays at depots to which the cargo was consigned, and so tied up rail operations unnecessarily. To remedy this handicap, Colonel Ross suggested to the OCT, ASF, that it would facilitate his operations if cargo consigned to various services was loaded on the same vessel.[39] Again, the difficulty in adopting this policy was linked with the type of cargo which was available monthly for shipment from the zone of interior. Maj. General Gross informed

38 Memo to A/COT for Water Activities, ASF, from Col. N.H. Vissering, 17 Nov. 1943.

39 Colonel Ross reported that the various technical services were "desperately short of help" at the depots, and the amount of available storage room was limited. Personal letter to Maj.Gen. C.P. Gross from Col. F.S. Ross, 30 June 1943.

Brig. General Ross that occasionally Bolero cargo was difficult to secure, while at other times large concentrations of certain types of cargo became available for shipment.[40]

Shortly after their arrival in the U.K., transportation officers realized that the Army would be required to operate harbor craft in fulfilling its mission at the British ports, and eventually in Continental ports. This foresight was not translated into action until after planning was renewed for a cross-Channel attack early in 1943. By March of that year Transportation Corps officials had worked out a table of organization for a harbor craft company which they forwarded for approval to Washington. There was considerable delay in securing approval of this new type of Transportation Corps unit, as well as delays in obtaining and training the personnel for them. However, by 1 April 1944 three harbor craft companies had been prepared in the U.S. and dispatched to the U.K., and two months later the number of such units had been increased to seven.[41]

These units engaged in useful activities in U.K. waters while preparing for extensive operations connected with the assault on the Continent, but there were not enough of them to meet prospective require-

40 Personal letter to Col. F.S. Ross from Maj.Gen. C.P. Gross, 14 July 1943.

41 On 1 April 1944 the theater expected to receive a total of 13 harbor craft companies, but six of them could not be sent. History of the T.C. in the ETO, Vol. III, Chap. I, p. 9. According to the Training Division, OCT, ASF, theater requests for its full complement of harbor craft companies reached the War Department too close to D-Day to permit training the necessary personnel. It requires a minimum of from six to seven months' training to prepare troops for harbor craft unit assignments. Author's interview with Maj. H.C. Hatchell, OCT, ASF, 8 July 1946.

ments. Plans for towing the equipment for protected anchorages and artificial harbors placed a specially heavy demand on harbor craft personnel, and since no more trained Army personnel could be obtained for such assignments, Brig. General Ross requested that civilian crews be dispatched from the U.S. The request met with a favorable response, and by March 1944, six civilian crews of 10 men each had debarked in Great Britain. Others arrived prior to D-Day. They were formed into the Army Transport Corps, and while many of its members lacked the necessary qualifications for their assignment, the Corps as a whole afforded valuable aid in Continental towing and port operations.[42]

Supplementing the activation of harbor craft companies was the establishment of port marine maintenance companies which were to keep in repair various types of floating equipment utilized by the T.C., and to assist in the construction or assembly of barges. Apparently no such units were available in the U.S., hence the theater was forced to activate four companies from personnel available in the theater. These four were organized at Plymouth in the first quarter of 1944, and immediately began essential operations in the field of their competence. The program for the assembly of 400 wooden type barges shipped from the U.S. knocked down was placed with British firms located on the south coast of England, but it became apparent that these firms would not be able to complete necessary assembly work prior to D-Day.[43] Their workers

42 Ibid, Chap. VII, pp. 7 and 10; and author's interview with Mr. P.C. Grening, OCT, ASF, 4 Nov. 1944.

43 History of the T.C. in the ETO, Vol. II, Jan.-Mar. 1944. The work was carried on at the Totnes, Hayle and Truro shipyards of Frank Curtis, Ltd., utilizing approximately 40 percent military personnel and 60 percent civilians. Ibid, Vol. III, Chap. VII, p. 12.

were persuaded to permit personnel from American maintenance companies to assist them, with the argument that American troops would be required to perform the same type of work on the Continent, and so they needed to obtain experience. The British workers accepted this argument, thereby permitting T.C. units to participate in the assembly work, and so the required number of wooden type barges was assembled on time.

In addition to the type of units mentioned above, there were also amphibian truck companies attached to the T.C. in the U.K. These units had proved their worth from the time of the invasion of Sicily in July 1943, and they were considered essential for projected operations on the western coast of Europe. By 1 June 1944, 11 amphibian truck companies had become available in the U.K., and most of these had received assignments for operations in connection with beach discharge activities in Normandy or projected port operations in Cherbourg. However, many of the units did not arrive in the U.K. until shortly before D-Day, and, moreover, they lacked technical training. It had been believed essential to make the units available to the OCOT, without completing their training in the U.S., and with the expectation that they would finish it in Great Britain.[44] In some instances, only by vigorous efforts were the last units to reach the U.K. able to learn even the essentials of operating amphibious trucks.[45]

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44 Information obtained by the author from the Training Division, OCT, ASF, April 1946.

45 "Three Men in a Dukw" by M. Silverman, Saturday Evening Post, 20 Apr. 1946.

U.S. ARMY CARGO DISCHARGED IN THE U.K. BY PORT AREAS - LONG TONS[46]

MONTH	BELFAST AREA	MERSEY AREA	CLYDE AREA	BRISTOL CHANNEL AREA	HUMBER AREA	MISCELLANEOUS PORTS	TOTAL
January 1942	108	-	-	-	-	-	108
February	9,222	-	-	-	-	-	9,222
March	11,707	-	-	-	-	-	11,707
April	5,078	-	-	-	-	-	5,078
May	13,785	16,606	9,263	224	116	6,359	46,353
June	22,017	5,930	5,003	593	-	177	33,720
July	16,364	41,244	6,355	11,828	-	-	75,791
August	22,596	63,835	12,752	76,224	10,435	439	186,281
September	6,199	92,080	40,572	75,540	20,337	5,019	239,747
October	2,137	109,649	17,525	12,127	2,030	362	143,830
November	1,805	33,524	8,011	10,834	54	-	54,228
December	59	22,518	871	12,817	473	189	36,927
January 1943	29	17,484	3,048	17,544	106	351	38,562
February	100	9,895	32	10,057	-	289	20,373
March	-	6,116	382	17,668	67	486	24,719
April	-	12,006	1,437	46,886	75	380	60,784
May	-	2,554	2,827	28,274	1,250	1,688	36,593
June	-	53,125	17,391	93,613	2,652	9,252	176,033
July	346	95,127	12,439	138,027	17,349	29,413	292,701
August	5,099	84,138	7,799	150,647	24,221	52,404	324,308
September	3,705	85,612	7,545	126,854	31,295	47,903	302,914
October	958	93,888	2,845	163,681	30,218	103,769	395,359
November	332	77,420	7,331	145,497	35,982	56,195	322,757
December	1,512	76,552	5,136	187,238	36,095	71,545	378,078
January 1944	2,423	81,068	4,639	109,692	28,876	54,890	281,588
February	4,047	43,636	4,578	115,703	19,319	46,439	233,722
March	903	132,690	7,205	232,882	39,593	54,551	467,824
April	938	106,536	5,802	240,997	59,530	82,581	496,384
May	1,675	238,209	35,135	171,665	118,207	36,724	601,615
June	66	246,056	71,542	181,975	118,446	17,781	635,860
July	356	185,623	41,893	183,920	124,741	4,690	541,223
Totals	133,566	2,033,121	339,358	2,563,007			

[46] Compiled from Progress Reports, OCOT, ETO, 31 Dec. 1943 (Table 6) and 31 July 1944 (Table 6A).

U.S. TROOP ARRIVALS IN THE U.K. BY PORT AREA[47]

	N. Ireland	Mersey	Bristol	Clyde	Eastern and Southern Ports
1942					
Jan.	4,058	-	-	-	-
Feb.	-	-	-	-	-
Mar.	7,904	-	-	-	-
Apr.	-	-	-	-	-
May	22,113	431	2,121	17	-
June	7,130	90	-	12,226	-
July	272	7,385	2	18,500	-
Aug.	2,545	17,718	13,538	40,068	-
Sept.	325	143	16	28,325	-
Oct.	44	6,526	3,897	29,356	15
Nov.	152	512	170	6,918	-
Dec.	262	15	10	9,035	-
1943					
Jan.	-	370	560	12,421	-
Feb.	-	778	471	157	-
Mar.	-	620	185	472	-
Apr.	-	1,574	501	3	-
May	-	9	268	18,943	-
June	-	5,774	626	43,571	-
July	171	11,936	176	40,748	243
Aug.	1	10,445	178	31,021	36
Sept.	1	36,156	5,400	39,533	26
Oct.	13,893	34,017	13,798	42,756	1,093
Nov.	-	60,168	19,723	93,888	81
Dec.	21,741	32,193	7,263	72,335	184
1944					
Jan.	5,391	62,007	23,120	75,866	21
Feb.	4,898	48,585	14,937	67,916	348
Mar.	2,660	36,087	16,447	68,359	859
Apr.	10,898	79,817	28,388	105,987	223
May	-	70,505	13,814	23,356	788
June	-	56,479	506	64,491	26
Totals	104,459	580,340			3,944

47 Extracted from History of the T.C. in the ETO, Vol. III, Chap. VI. pp. 16-17.

V. U.S. PREPARATIONS IN THE U.K. FOR OVERLORD (PART II)

In planning for the discharge of cargo during the assault phase of the Normandy operations, the Allies relied on the projected movement of supplies across the beaches, supplemented by the use of the artificial harbors which were to be set up as soon as practicable after D-Day. It was estimated that by D plus eight the port of Cherbourg would fall into Allied hands. Although it was expected that the Germans would have thoroughly demolished port installations and blocked harbor entrances and the space alongside the berths, the port was to be speedily reconstructed and rehabilitated by the Corps of Engineers and the U.S. Navy, so that the 4th Port could promptly commence receiving and distributing U.S. troops and cargo.[1]

Following the capture of Cherbourg, other Normandy ports and then Brittany ports were to be brought under U.S. Army control, ultimately making a total of four major and eight minor ports in Western France which were to be operated by the T.C. In line with this planning, the OCOT prepared to set up equipment which would have to replace that which the Germans and Allied bombers inevitably would destroy.[2] As part of

1 History of the 4th Major Port, June 1944-May 1945. Another source states that Cherbourg was not to be obtained until D plus 15. Omaha Beachhead, 6 June - 13 June 1944, prepared by the Historical Division, War Department Special Staff, p. 5.

2 More detailed planning for Continental port operations was undertaken by a special committee made up of representatives from Headquarters, ETOUSA, 21st Army Group, the British Admiralty, the British Air Ministry and various authorities on water transportation. From this study, the Committee prepared estimates of daily port capacity for the first 90 days of the invasion for every port under consideration. After ports were selected for T.C. operation, the Marine Operations Division, OCOT, SOS, ETO decided what units would supplement the mobile ports to facilitate the speedy discharge of all vessels. History of the T.C. in the ETO, Vol. II, p. 141.

this preparation, on 12 August 1943 the T.C. submitted its first operational project (ETO Project TC No. I) for the stockpiling in the U.S. of, among other items, 120 tugs and other craft including a number of floating cranes.

Obtaining Equipment

At that time the availability of such floating equipment, according Marine engine manufacturers and shipyards in the U.S. were almost completely occupied with high priority Navy requirements for landing craft and analagous items.[3] Consequently, the harbor equipment actually obtained included many substitutions of less desirable types than those originally contemplated. For instance, the non-availability to the Army, in quantity, of pontoons of the type used to construct Rhino (powered) bargers, made it necessary to accept the inferior 160-foot wooden type barge. An account of T.C. supply activities will be presented in a later section of this monograph, but it might be noted that the spare parts problems became especially severe because of the miscellaneous types of marine engines which had to be used.

The status of the original project requisition, with substitutions and additions arising from later requisitions, as of D-Day, is shown in the table below:[4]

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3 Comments prepared by Planning Division, OCT, ASF, 1 Apr. 1946, on General Board Report, USFET, Transportation Section, Study #122.

4 History of the T.C. in the ETO, Vol. III, Chap. VII, p. 14.

TYPE	ON REQUISITION	ON HAND D-DAY	
162' & 180' tanker barges	50	11	
123' steel tugs	1	1	
111' steel tugs	5	5	
146' steel tugs	10	0	
126' wood tugs	13	0	
86' steel tugs) 85' steel tugs) 74' steel tugs)	96	56	
65' freight & passenger boats	5	4	
65' fire boats	20	12	
46' Motor Towboat, Large	100	100	
42' Chris Craft	20	0	
38' Sea Mules	106	106	(30 assembled)
37' patrol boats	20	6	
26' mine yawls	20	0	
60-ton floating cranes	10	5	
30-ton floating cranes	36	17	
104' steel barges	473	300	(200 assembled)
60' wooden barges	400	400	(all assembled)

Not all of this floating equipment had been requested for D-Day, but such items as tugs and barges were urgently required for assault and follow-up operations. Indeed as D-Day approached, both the theater and the War Department made special efforts to insure full delivery of tugs and barges, because of the plan to preload barges for discharge on the beaches, and employ tugs for various towing operations.[5] Maj. General Ross testified that on D-Day, despite the failure of 23 tugs to arrive as promised during May 1944, T.C. tugs and lighters saved the day in outloading operations.[6] They also were particularly valuable in towing sections of the artificial harbors to Normandy and other cross-Channel towing operations or harbor work such as were required at Cherbourg.

In addition to procurement difficulties, there had been special problems in moving tugs and barges to the U.K. Lack of available ship

5 Memo to Maj.Gen. C.P. Gross from Col. R.M. Hicks, 9 June 1944.

6 Personal letter to Maj.Gen. C.P. Gross from Brig.Gen. F.S. Ross, 6 June 1944.

space in the first quarter of 1944 led to a plan to dispatch some tows of tugs and barges from New York. Regardless of the fears of towing experts that marine casualties might affect the program adversely, trans-Atlantic towing operations were carried through with only slight losses.[7] The chief drawback to this program was the length of time required for delivering the equipment in the U.K., since such trips required several weeks, as against eight to nine days for the delivery of barges and tugs loaded on the decks of large cargo vessels.

Preparing for continental port operations also involved providing port battalions with ample equipment, and training them in beachhead operations. The U.S. port battalions dispatched to North Africa in 1942, according to the current tables of equipment, were only sparingly equipped in view of the character of their assignment. As a result, both the OCOT in the U.K. and Colonel Ross in North Africa drew up special lists of equipment which should be provided such units in the future. These two lists were compiled and received War Department approval substantially as drawn up.[8] Later these lists became incorporated into a revised port battalion table of equipment, a table which called for tractors, trailers, motor vehicles, floating equipment such as 30-ton cranes, and various types of cargo handling gear. It should be added that only the amount of equipment required to operate a particular port, that is, one already well equipped or one poorly equipped

7 Author's interview with Mr. P.C. Grening, OCT, ASF, 4 Nov. 1944. On 2 Feb. 1944, Mr. Grening was temporarily assigned to the OCOT, SOS, ETOUSA, to inspect harbor craft equipment.

8 Author's interview with Lt.Col. J.R. Worthington, Chief, Overseas Operations Group, OCT, ASF.

when U.S. port battalions commenced working, was provided each battalion in accordance with the list approved by the theater OCOT. To a large extent, by D-Day the necessary equipment had been provided all port battalions in the ETO, both for operations in the U.K. and on the Continent.[9]

In order to insure efficiency in the work of port battalions during the initial phases of the invasion, a training school was opened at Mumbles, Wales on 1 January 1944.[10] There the port battalions were trained to unload ships under as near actual battle conditions as possible. The training was conducted in conjunction with other units of the Army, such as the assault Engineers, Infantry teams and the Navy. Previous to this training, port battalions had become adept in operations that involved the discharge of cargo under more or less normal conditions of protected harbors. The school stressed the processes of getting goods ashore by Dukws from coasters lying offshore. The first objective was to train battalions with an adequate amount of gear to discharge cargo onto a bare beachhead. The school also constantly stressed basic military training so that the battalions would not constitute a burden to units which were to do the fighting.

Movement Control

The Movement Control Division, OCOT, established during the summer of 1942 fulfilled its mission through the work of Regional and District Offices and the all-important Rail Transportation Officers. In general, these officials had been placed in subordinate positions to the British

9 History of the T.C. in ETO, Vol. III, p. 7.

10 Ibid. For an account of port battalion training in loading, discharging and crane operations in certain British ports, see Ibid, Vol. II, pp. 51-52.

movement control personnel, and in the spring of 1943 they were handling most of the moves of U.S. troops and supplies in the U.K. only in liaison with the British. By that time, that is May 1943, Colonel Ross was desperately in need of additional traffic regulating groups which would provide personnel to fill the expanding U.S. movement control operations.[11] He had found this type of unit most valuable in North Africa, and he wished to increase the number of those already available in the U.K. for necessary work there. There was considerable delay in obtaining additional traffic regulating groups from the U.S., due to a shortage of personnel available to the Transportation Corps, but before the end of the year 1943, three groups had debarked in the U.K. These groups lacked training in British transportation and movement control operations and had to be given an intensive training course during a week of study.[12] The course was presented by some of the ablest transportation officers in the British Isles, and they covered all the subjects that traffic control personnel might be required to know in carrying out future assignments.

Two additional traffic regulating groups arrived in the U.K. during February 1944, but still the number was insufficient to handle the extremely heavy traffic movements at that time.[13] In order to care for pressing needs, the theater activated two additional groups in the Central Base Section on 1 April 1944. This brought the total number of

11 Personal letter to Maj.Gen. C.P. Gross from Col. F.S. Ross, 18 May 1943.

12 History of the T.C. in the ETO, Vol. I, Appendix 15; and Vol. II, p. 7.

13 Ibid. These groups were organized under a T/O calling for 46 officers and 328 enlisted men, in contrast to former groups activated under a T/O requiring 75 officers and 300 enlisted men.

such units available in the U.K. to seven, and that number was not increased prior to D-Day.

As previously explained, the work of the Movements Division, OCOT, was carried out by a number of its branches, of which the two most important were the Freight Branch and the Passenger Branch. During the heavy receipt of U.S. Army cargo in the first quarter of 1944 the main problem of the Freight Branch was to avoid congestion at any point. Consequently, the possible points of congestion were foreseen, and plans were laid to divert cargo to another point when the necessity arose.[14] Such diversions occasionally disturbed other plans, and so required still further adjustments. Occasionally, freight would arrive in such large quantities at so many places that congestions could not be avoided. This was particularly true of the Bristol Channel ports during March and April 1944. Nevertheless, all types of transportation facilities were used to clear port areas of freight. Motor, rail, air and even water shipments to the ports nearer the cargo's ultimate destination were used to dispatch equipment. Special problems occasionally arose through the arrival of extra heavy equipment, such as oversized tanks, tractors, rock crushers and road graders. Frequently, these vehicles could not be moved by rail and the services to which they belonged were called on to assist in their movement by furnishing heavy type trucks.

Cargo movement had become so heavy by the end of March 1944 that the British Movement Control office requested the Americans to keep down the amount of U.S. Army supplies moving by rail and road in Great Britain as much as possible.[15] The Americans complied with this request,

[14] History of the T.C. in the ETO, Vol. II, p. 11.
[15] Ibid, p. 12.

and this compliance was matched by British efforts to reduce their own

tionally heavy. The British placed the severest limitations on all civilian traffic and on certain types of perishable goods moving into London. In most cases the embargo was due to a shortage of staff members to handle any more than military traffic.

The Passenger Branch of the Movements Division also found its duties increasingly heavy in the first quarter of 1944, but endeavored to insure the prompt dispatch of all incoming U.S. Army personnel, and to assist in planning for any specialized moves.[16] Examples of specialized moves were those of prisoners of war arriving in the U.K., and hospital casualties. Apparently, such personnel were brought in from the North African Theater, and handling them afforded the Passenger Branch valuable experience for dealing with the flood of such personnel which resulted from the invasion of Normandy. Of particular interest was the scheduling of hospital trains, the control of which was under the theater Surgeon General. The conversion of British railway cars to hospital trains will be described later, but it is of interest to note that 12 trains had been completed by the fall of 1943, largely through the efforts of American railway troops.

Of overall assistance in American movement control was the Regulating Branch, Movements Division, which acted as policeman for all types of U.S. Army moves.[17] This branch worked closely with the Regional Transportation Offices, notified the Ministry of War Transport of in-

16 Ibid, pp. 16ff.
17 Ibid, p. 14.

en kept strict account of traffic with a view to

venting tion at U.S. Army Depots.

To s nt the work of these well established branches, in Sep-

3 an Operations Branch was established in the Movements Division. Its chief assignment was to plan the control of traffic for any operational move which involved more than one base section.[18] It also worked out and published plans dealing with short and long sea voyages. These publications were to serve as guides in the practice exercises for the actual invasion of the Continent. Moreover, the Branch made preparations for implementing the Rankin operation, which was the code name applied to a plan for the movement of Allied troops from the U.K. to the Continent in case of a German collapse. And finally, the Operations Branch prepared for the pre-planned movement of supplies.

The Movements Division also had activated a Highway Branch in 1943, because there was an increasing amount of heavy hauling by motor vehicle beginning with the summer of that year. The Regional Transportation Officers, formerly concerned primarily with the movement of supplies and personnel by rail, also were given control of all U.S. road movements.[19] In part, this assignment resulted from the lack of British personnel for handling American as well as British motor transportation. Control of motor transport activities was so closely linked with the work of the Motor Transport Division that further consideration of the work of the Highway Branch, Movements Division, will be given in connection with

18 Ibid, p. 20.

19 As road traffic became heavier during the first half of 1944 a Road Traffic Office was established in certain areas, such as Southern Base Section, and Road Traffic Officers handled only movements by motor vehicle. Ibid, Vol. III, Chap. I, p. 5.

the Motor Transport Division.

Railway Operations and Preparations

The principle tasks of the Military Railway Service under the OCOT, were to plan for railway operations on the Continent, design equipment to meet military needs, receive and assemble rolling stock for a joint stockpile with British equipment, train the personnel of shop battalions for operations on the Continent, and operate switch engines at U.S. depots. While these tasks were in preparation or operation, U.S. forces were able to loan to the British nearly 500 locomotives and a large number of freight cars in order to relieve the burdens placed on British railroad equipment. The freight cars included several hundred war flats, 42 refrigerator cars and 100 tank cars.[20] At the same time, plans for Continental operations were carefully drawn up, and the ensuing satisfactory buildup of Bolero railway units and equipment afford an interesting comparison with the corresponding and less successful efforts in behalf of motor transport, which will be discussed later.

The estimated requirements of U.S. railway units and U.S. railway equipment which were prepared in the summer of 1943 were based in part on the estimates drawn up in 1942. The two sets of estimates prove fairly similar, although the type of operation planned for in 1942 was different from that studied in 1943. During May of the latter year, Colonel Ross completed an initial draft of Overlord railway requirements. That part of the estimate which concerned railway units was modified during the following August, and requirements were then projected in three phases as follows:

20 Ibid, Vol. II, pp. 81-2.

	In U.K. by D-Day	On Cont. to D + 90	On Cont. to Rhine
Headquarters, MRS	-	1	-
Railway Grand Divisions	-	2	6
Railway Operating Battalions	1	5	28
Railway Shop Battalions	1	1	7

However, it was decided later to move more units to the U.K. prior to D-Day, and particularly to have the Headquarters, Military Railway Service, present for the purpose of overall supervision. Consequently, by 1 June 1944 the 2nd Military Railway Service, two railway grand divisions (the 708th and the 709th), five railway operating battalions and four railway shop battalions had been stationed in the U.K. The two railway grand divisions had arrived during December 1943 and January 1944, and had been assigned to two separate areas so that each could provide broad technical supervision for the military railway units within the respective areas.[21]

It should be noted that during the first quarter of 1944, there were only four operating battalions and two shop battalions available in the U.K. Each of the railway grand divisions were attached to a base section headquarters as a staff section of the Regional Transportation Office. Their authority was somewhat reduced when on 20 March the 2nd Military Railway Service under the command of Brig. General C.L. Burpee reached the U.K. About the same time the railway grand division and the railway operating battalion were provided with new tables of organization and equipment.[22] The reorganization decreased the personnel of the grand divisions, and altered the equipment of both types of units.

21 Ibid, Vol. II, p. 76

22 Ibid, p. 79.

The greatest change in equipment for the operating battalions was an allowance of 80 machine guns and 40 twin mounts, which were to be installed on flat cars for the protection of trains.

Estimates prepared in 1943 for the amount of locomotives and rolling stock that ultimately would be required for military operations on the Continent form an interesting basis for comparison with those prepared in 1942. It will be recalled that the Services of Supply in the European Theater and the Offices of the Chief of Transportation and the Chief of Engineers in Washington, had prepared widely different estimates by July 1942. After studying the differences and determining the amount of equipment available, the Services of Supply in the War Department authorized the procurement of 990 locomotives and 32,900 cars during 1942 and 1943.[23] In contrast, the requirements which received approval under the planning begun in 1943, called for 2,800 locomotives and 57,200 cars for the European campaign. Of these, 1,782 locomotives and 20,381 cars (exclusive of cars for hospital trains) had been received in the United Kingdom by 1 June 1944.

U.S. railway cars were shipped to the U.K. unassembled, and so U.S. railway shop battalions faced a heavy task in assembling them.[24] Since only two shop battalions had reached the U.K. before 1 April 1944, and since each of these battalions was called upon to perform many assignments outside its field, the car erection program fell considerably be-

23 Memo to Ch/Engrs from Brig.Gen. LeR. Lutes, 30 July 1942. Military railways were still under the Chief of Engineers at that time.

24 Such shipments saved approximately 75 percent of the shipping space that would have been necessary if completed rolling stock had been carried overseas. History of the T.C. in the ETO, Vol. I, p. 68.

hind the D-Day target.[25] By the end of June 1944, besides the number of locomotives placed in operation, 6,293 freight cars, 647 tank cars, 777 flat cars and 193 refrigerator cars were assembled.[26] There is no record, however, that this failure had any material effect on railway operations on the Continent.

Certain types of railway cars were assembled at a faster rate than the others, partly because they were required to assist in moving military freight in Great Britain. These cars, as well as the locomotives, were loaned under an agreement that they could be recalled for use on the Continent on 14 days' notice.

In addition to assembling railway cars, the U.S. railway shop battalions also effected certain modifications in standard 2-8-0 locomotives as well as 0-6-0 locomotives, as they arrived from the U.S. Furthermore, they completely assembled approximately 40 of the 650 h.p Diesel locomotives which were needed for the invasion. The shop battalions also constructed several "work trains" for the Corps of Engineers to use in repairing track on the Continent.[27] This equipment recalls the mobile repair shops, or "wrecking lorries", the construction of which was begun in 1942, to facilitate repairs to railway rolling stock. These mobile repair shops, however, were automobiles, not railway cars.

Considerable "extra work" was required of the railway shop battalions, including assistance in the erection of barges received unassem-

25 Ibid, Vol. II, p. 80.
26 Ibid, Vol. III, Chap. XI, p. 4.
27 Personal letter to Maj.Gen. C.P. Gross from Brig.Gen. F.S. Ross, 6 June 1944.

bled from the U.S., the conversion of Liberty ships so that they could serve as motor transport carriers, and the conversion of LSTs which were to be used for ferrying railway rolling stock to the Continent. These tasks require some explanation.

The conversion of LSTs to fit them for carrying railway stock and equipment was first worked out by Lt.Col. S.H. Bingham of the Military Railways Division, OCT.[28] The necessary plans were drawn up in the Division and the work performed by the MRS shop battalions. A total of 18 LSTs were so converted by D-Day. The conversion of Liberties was an even larger, though perhaps no more important, task. One hundred and thirty-six such vessels were converted in motor transport vessels (MTVs) by ballasting four of the five holds of each vessel and flooring over the ballast to permit the ready carriage of motor vehicles.[29] The fifth hold was equipped with "standee bunks" and toilet facilities in order to accommodate the drivers of the vehicles. The shop battalions also aided in the harbor craft erection program by completing work on 105 wooden "dumb" barges, 207 steel barges, and 10 sea mules (marine tractors).

Reference has been made to the conversion of passenger cars into hospital trains. Consideration was first given to the construction of hospital trains in 1942. It was then realized that it would be impractical to ship the necessary materials from the U.S. and it was estimated that there was a shortage of materials in the British Isles. The way out of this dilemma was suggested by the British who proposed that old passenger cars and diners be converted. The medical authorities sub-

28 History of the T.C. in the ETO, Vol. III, Chap. XI, p. 5.

29 Ibid. Maj. General Ross states that there were 138 Liberties converted for the MWT and the Admiralty. Personal letter to Maj.Gen. C.P. Gross from Brig.Gen. F.S. Ross, 6 June 1944.

mitted the specifications and the cars were altered according to plan by civilian railway crews with considerable assistance from U.S. Army personnel.

By 1 September 1943, 15 hospital trains had been placed in operation and they were used to carry patients to and from the hospital ships which usually docked at Avonmouth.[30] Later eight more were added, so that there were 23 by D-Day, with four more in the process of construction.[31] Each train consisted of 14 cars, 7 of which were ward cars equipped with triple-deck beds and handling 250 stretcher cases. Among other features was a utility car providing heat when the train was standing on sidings.

The railway shop battalions performed their work at many stations in Great Britain, but two of the most prominent, because they also were among the principal railway equipment storage depots, were at Hainault and Ebbw Junction.[32] By the latter part of March 1944 there were 51 officers and 1,349 enlisted men attached to these two depots. The Hainault depot included a large number of rail sheds as well as ample sidings, located 11 miles northeast of London. The shops had never been used because they were completed just before the war for use in an electrification scheme which had not been completed when the war broke out. They possessed all the technical facilities required, as well as sufficient living accommodations. Only small effort was necessary to improve the living accommodations, and the Military Railway Service constructed

30 The Story of Transportation in the U.K., pp. 142-143.

31 Letter to Maj.Gen. C.P. Gross from Brig.Gen. F.S. Ross, 6 June 1944.

32 One report speaks of the use of more than 1,000,000 square feet of outdoor storage space in depots at High Bridge and Sudbury-Egginton. History of the T.C. in the ETO, Vol. III, Chap. I, p. 20.

two additional tracks for erection and storage purposes. It was fortunate that 90 percent of the T.C. rail equipment requirements could be stored in the open. This made it possible to use the limited amount of closed storage for American locomotives and other delicate machinery.

Motor Transport Plans and Operations in the U.K.

An account of motor transport operations in the U.K. must necessarily be closely linked with plans for operations on the Continent because of certain basic similarities. The most pronounced of these similarities was the lack of centralized control (although a measure of such control was provided late in the campaign through the establishment of a provisional organization), and shortages in equipment and personnel for meeting necessary trucking requirements. During World War I also there had been no centralized control until the Motor Transport Corps was established during July 1918 -- just four months before Armistice Day. The fact that such control finally was adopted, caused students of motor transport activities in World War II to remark that in preparing for operation Overlord, it was surprising that there had been "no adequate (central) organization for what was to be the largest military truck operation in the history of modern warfare."[33]

This comment made late in 1945, had been foreshadowed by a statement from transportation officials in Great Britain during the Overlord planning period. Shortly before D-Day the T.C. historian in the ETO remarked that "it appeared that Washington did not realize the full importance of motor transportation in the European Theater of Operations."[34]

33 Report of the General Board, USFET, Transportation Section, Study #122, p. 42.

34 History of the T.C. in the ETO, Vol. II, p. 65.

In this case reference was made particularly to the slow delivery from the U.S. of truck units and equipment.[35] However, it should be noted that the criticism could not be applied justly to some elements in Washington which were exerting all possible efforts to fulfill the theater requisitions. On the other hand, the criticism did apply to those in the theater who were responsible for the overall planning for Overlord, both as regards the estimated number of truck units required and the method of controlling available units. Justification of the criticism may be found in an examination of outstanding features of the organization, preparations and employment of motor transport during the Bolero period of the European campaign.

Theater records available to the author of this monograph are not clear as to the first unit established to supervise motor transport operations in the U.K. during World War II.[36] During May 1942 a Motor Transport Division was activated in the U.S. and arrived in the U.K. in the following month. Apparently, it became attached there to the T.C., for initially, that is until 31 August 1942, "truck companies of different U.S. Army forces were under the direction of the Transportation Corps."[37] During the same period the Ordnance Corps established repair shops and provided service for all motor vehicles. However, many of

35 On D-Day Maj. General Ross testified that the failure of the War Department to fulfill theater requisitions for motor transport vehicles indicated that vehicle procurement was the most snafued program he had encountered. Personal letter to Maj.Gen. C.P. Gross from Brig.Gen. F.S. Ross, 6 June 1944.

36 Since the present monograph was drafted, a detailed History of Motor Transport in the European Theater of Operations, prepared by the MTS, OCOT, ETO, 1 May 1945, has been received by the Historical Unit, OCT, ASF. However, there has not been sufficient available time to incorporate in the monograph the information contained in the History.

37 The Story of Transportation in the U.K., p. 111.

these services were duplicated by the Quartermaster Corps in its truck maintenance activities. In order to eliminate this duplication, on 31 August the Ordnance Corps was given jurisdiction over all vehicles, including their design, development, storage, issue, and heavy repairs.[38] The actual operation of vehicles under this change became the responsibility of the Quartermaster Corps, which then took over control of the Motor Transport Division. Over-the-road movement of motor vehicles, however, remained under the control of the T.C. In addition, the 31 August directive provided that trucking units were to be made available to the T.C. when forces requiring transportation did not have their own vehicles.

On the whole, this division of responsibility worked well enough while there was only a limited amount of U.S. Army personnel and cargo trucking. This condition obtained until April 1943, largely because British railroads were capable of handling all necessary traffic. But there also was a reluctance to use the narrow and winding British roads with their hedges which frequently obstructed drivers' views, and also there was the necessity for saving gasoline, oil and tires as much as possible.

During 1942 and 1943, the T.C. encountered difficulties in exercising effective traffic control for on a number of occasions U.S. troop units moved by motor vehicles within the U.K. without notifying Regional Transportation Officers.[39] Later such actions, which embarrassed U.S.

38 History of the T.C. in the ETO, Vol. III, Chap. I, pp. 17-18. First and second echelon maintenance on Q.M. vehicles was the responsibility of the Q.M. Corps in accordance with instructions on standards which were prepared by Ordnance.

39 The Story of Transportation in the U.K., pp. 110-111.

movement control officials who were functioning with their British counterparts, were practically eliminated as unit commanders became acquainted with the methods of traffic control and the T.C. obtained additional regulating personnel.

More radical steps were necessary, however, to meet the T.C. responsibility for responding to extraordinary demands for truck transportation. For example, in March 1943, when Admiral H.R. Stark of the U.S. Navy requested the prompt movement of Navy cargo from depots to the Avonmouth docks, no trucks were immediately available to the T.C. in the southern district where this move was to originate. Only with considerable difficulty was it possible to obtain the vehicles necessary to fulfill the Navy request. Incidents of this sort pointed to the value of centralizing operational control in the organization that was made responsible for supplying vehicles for non-organic as well as organizational movements.

Apparently in recognition of the validity of such a view, during July 1943 operational control of motor vehicles in the ETO was returned to the T.C.[40] A small Motor Transport Division was then organized in the OCOT under the command of Lt. Colonel L.A. Ayres, who formerly had headed a similar unit in the Quartermaster Corps. The mission of this unit included accumulation of requirements, initiation of equipment studies, preparation of SOPs and operational plans for the employment of motor transportation, and the allocation of motor transport units to major commands.[41]

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40 By Circular #256, 16 Oct. 1943, the War Department authorized the activation of a Motor Transport Service under a theater Chief of Transportation.

41 Report of the General Board, USFET, Study #122, p. 13.

The planning in which this unit engaged was based on the retention of operational control by the T.C. of all SOS motor transportation exclusive of organizational vehicles. In the United Kingdom, however, as well as initially on the Continent, all non-organic motor transport units were placed under the command of the various base sections, and only under the technical supervision of the Chief of Transportation.[42]

When the T.C. first assumed control of highway movements in 1942 it sought to provide for the most economic employment of trucks by the inauguration of what was called a "Return Load Plan."[43] Under this plan the leader of every convoy was to notify the Rail Transportation Officer at his destination when his convoy would arrive. This advance notice would give the RTO an opportunity to find loads for the convoy on its return trip. The cargo of U.S. Army forces was accorded first priority on the return loading, but if they had no shipments the space was made available to the British. Thereafter, although some smaller convoys failed to notify the RTOs, a check proved that 60 percent of the convoys conscientiously cooperated and were filled when they made their return trip.

During the first year that the plan was in operation, most of the return loads originated in the Southern Base Section, where it was estimated that, through June 1943, "76 percent of the cost of convoys had been saved." The plan remained in operation with a large measure of effectiveness through the succeeding period as American traffic grew

42 In the ETO the meaning of the phrase "technical control" was long a matter of dispute. A later section of this monograph will describe how the SOS, later the Comzone, Headquarters and the OCOT reached a common understanding on the point early in 1945.

43 The Story of Transportation in the U.K., pp. 112-113.

heavier.[44] During the week ending 19 February 1944, 2,649 vehicles were reloaded for trips totalling 91,284 miles. By 31 March a total of 50,880 vehicles had been reloaded with 113,965 tons of cargo, for trips totalling 3,430,000 miles.[45] Improvement in handling inter-regional movement of convoys developed during April 1944 when the Motor Transport Division, OCOT, secured the adoption of standard forms and procedures for routing convoys, to replace the separate forms previously adopted by each Region.

Planning for operations on the Continent led the Chief of Transportation to request an eventual buildup of 220 Quartermaster truck companies, but of this number the theater authorized only 160. The arrival of the authorized number was considerably delayed, only 94 companies having reached the U.K. by 1 June 1944. Partly because of the failure to secure approval of the number of truck companies desired, but chiefly because of the advantages which more suitable equipment would afford, the Office of the Chief of Transportation planned to secure special types of motor vehicles for 40 truck companies, instead of the standard 2½-ton trucks. On 23 August 1943 the OCOT sent requisitions to the U.S. for some of this special equipment, particularly truck tractors and semi-trailers. These and later requisitions called for the following vehicles:[46]

44 The increase in road traffic is reflected in the record of 454 convoys of 50 or more vehicles during November 1943, and 4,080 convoys during March 1944.

45 History of the T.C. in the ETO, Vol. II, p. 28. During April the 8th Air Force decided to abandon use of "return loads", and consequently return loads in the Eastern Command where the 8th Air Force was stationed, "took a nose dive". Ibid, Chap. III, p. 13.

46 Memo to Ch/T, ASF, from Col. F.C. Horner, 12 June 1944. Not all of the vehicles requested by ETO received War Department approval, but those listed above did receive it.

4,147 5-ton truck tractors
7,194 10-ton semi-trailers
2,128 2½-ton cab-over-engine 6x6 cargo trucks
1,030 2000-gallon gas tank trailers
1,588 750-gallon tank trucks

Eighty percent of these vehicles were desired in the U.K. by 31 March 1944, and all of them by the following June. The original request of August 1943, which was perhaps the most important of all those submitted, did not receive War Department approval until the following December. Then there were lengthy procurement delays, pointing to the inability to fulfill the theater requisitions before D-Day. Consequently, in view of the expected importance of motor vehicles in Continental operations, it became necessary to accept certain substitute vehicles, as follows: 541 1½-ton truck tractors; 1,082 3½-ton semi-trailers; 2,000 750-gallon gasoline skid tanks; and 1,750 5-ton truck tractors with an equivalent number of semi-trailers. Not all of this substitute equipment, however, reached the U.K. before D-Day.[47]

Most of the special motor equipment was intended to be substituted for equipment provided in truck unit tables of equipment, as mentioned above. However, authorities in the Office of the Chief of Transportation, ASF, who were responsible for processing requisitions received from the European Theater, provided for the shipment of full tables of equipment allowances, in addition to as much as possible of the special equipment. Consequently, it was estimated that there were 10,000 more motor vehicles in the U.K. by D-Day than might have been available if

47 Ibid. By June 1944 shipment of the substituted 1,750 5-ton units was accomplished as rapidly as possible by diverting them, as they came off the production line, from projected shipment to the China-Burma-India Theater.

only "authorized" vehicles had been shipped.[48] The value of these "extra" motor vehicles was to become evident in the effort to meet the heavy trucking requirements that followed the St. Lo break-through in the Normandy peninsula during the latter part of July 1944.

The number of motor vehicles for which special requisitions had been placed by the OCOT, and the number actually supplied to the European Theater by 30 June 1944, irrespective of substitutions, are shown in the following tabulation:

Requisitioned	Supplied	
4,147	2,020	4-5 ton truck tractors
7,194	525	10-ton semi-trailers
2,128	1,350	2½-ton cab-over-engine 6x6 cargo trucks
1,030	687	2000-gallon gas tank trailers
1,588	600	750-gallon gas tank trucks

Many thousands of motor vehicles, mostly organizational types, were shipped from the U.S. to the U.K. in unit packs, or partially disassembled and boxed. This required their assembly in the U.K. and the work was performed by British laborers and at British shops. In addition, a total of 101,611 assembled vehicles had been received in the U.K. from the U.S. by 1 June 1944. This was only about a fourth of the number of assembled vehicles delivered in the European Theater up to the end of the campaign, but it illustrates the extent of stockpiling in the U.K. for a Continental campaign of movement.

The delay in receiving motor transport vehicles as well as truck units created a number of problems for the Motor Transport Division, OCOT, all of which were not solved by D-Day. For example, of the 94

48 Author's interview with Lt.Col. J.R. Worthington, Chief, Overseas Operation Group, OCT, ASF.

truck companies that had reached the U.K. by 1 March 1944, only 47 were adequately equipped with vehicles and second echelon tools on arrival.[49] Some truck companies arrived without any vehicles, and were engaged in various labor jobs until vehicles could be assigned to them. Of the 47 companies supposed to be adequately equipped, only 16 were considered ready for field duty since they were the only ones which had machine guns for their trucks. Only by special efforts could the necessary deficiencies be corrected by D-Day.

There also were training difficulties, arising from the fact that some of the truck personnel had been trained to drive only with empty trucks.[50] When they were given heavy loaded ones, they stripped the gears. More serious was the fact that of the 40 (of the 160 authorized companies) which were to receive heavy type motor transport vehicles, no unit had been trained in their use by March 1944. The failure of the heavy equipment to arrive in sufficient quantities prior to D-Day made it difficult to provide the training necessary for efficient operation of these specialized types of motor vehicles. Incidentally, certain American truck units were trained in driving captured German vehicles, which were brought in from the North African Theater.

Preparations for Continental operations also brought a number of personnel problems which were not easily solved. In the first place, the normal channel for securing replacement drivers was practically closed.[51] Since Q.M. truck companies were operated under T.C. control,

49 History of the T.C. in the ETO, Vol. II, p. 67.
50 Ibid.
51 Ibid, p. 68.

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it was probably only logic . replacement personnel became available, for the theater Quartermaster to assign them to units under Q.M. control. However, by special arrangement with the Theater Assistant Chief of Staff, G-3, the Motor Transport Division, OCOT, was able to obtain some replacement personnel from replacement pools of the field forces.

The theater OCOT also requested War Department approval of a 40 man overstrength for each truck company, in order to insure 24-hour operation of vehicles.[52] Delay in answering this request ended on 5 April, when the War Department authorized the overstrength, but informed the theater that it would have to obtain the necessary personnel locally. After vigorous searching, the theater OCOT was able to locate and obtain 4,000 personnel to meet its requirements, without, however, being able to provide them with very much training before they were assigned to truck driving tasks. A further item of significance was the delay in bringing truck company officer strength up to that authorized in tables of organization. For instance, on 27 March 1944 there was a table of organization shortage of 155 officers for Q.M. truck companies then present in the U.K.

The theater OCOT also gave support to the effort, long current in the War Department, to increase motor transport capacity by securing permission to overload the standard 2½-ton truck.[53] Experience gained during the North African campaign had shown that in normal over-the-road trucking operations it was feasible, indeed on some occasions it

52 Ibid, pp. 69-70.

53 Ibid, Vol. III, Chap. XII, pp. 2-3.

was absolutely essential, to exceed authorized loading levels.[54] The ;hway Division, OCT, ASF, sought official sanction for overloading after May 1943, and instigated tests at the Ordnance Aberdeen Proving Grounds, which demonstrated that in highway operations, under normal conditions, a 2½-ton truck could safely and efficiently carry a much heavier load. ETO backing for the Highway Division program developed in January 1944 after an OCT, ASF, representative in the U.K. pointed to the fact that Air Corps 2½-ton trucks were loaded with only two 1-ton bombs, when it was believed that if authority were granted, several more could have been efficiently carried.[55]

The program for lifting the War Department truck load limit was further aided early in 1944 when a representative of the North African Theater Chief of Transportation collaborated with the Highway Division, OCT, ASF, in presenting its case to OPD and G-4, General Staff. As the result of the support from these several sources, on 29 May 1944 the War Department granted authority for the overloading of all 2½-ton trucks in over-the-road traffic to a maximum of 100 percent.[56] This meant that standard Army trucks could become twice as effective in cargo hauling as they formerly had been.

The shortage of U.S. truck companies made it necessary to request British assistance in truck transport during the period just prior to D-Day. The British, also short of driver personnel, embarked upon a drive to secure civilian, particularly truck drivers, and they

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were so successful that they were able to supplement greatly the lift of U.S. truck units. An agreement was also reached whereby the British would take over the responsibility for trucking at U.S. depots when U.S. truck units were transferred to the Continent. This agreement proved of great benefit in the movement of American cargo to the Continent.

Growth of T.C. Supply Activities

When the T.C. was first established in the U.K., the assumption was that most of the supplies and equipment that it needed would be furnished by the other supply services, and it would not have large supply responsibilities.[57] As a matter of fact, until the fall of 1943 only one officer in the Administrative Division, OCOT, was required to handle supply matters. Initially his work was simplified by the fact that the Military Railway Service and its supply requirements were the concern of the Corps of Engineers. On 16 November 1942, however, the MRS was transferred to T.C. control and furnishing equipment for railway battalions, locomotives, rolling stock, and the spare parts which they required became a T.C. responsibility. The Engineer depot companies that had handled supplies for the MRS were not included in the 1942 transfer, so the T.C. was obliged to activate its own depot units. Anticipating later discussion, it should be noted that when T.C. units were first activated they handled only MRS supplies, but later their responsibilities were expanded to handle an ever increasing amount of T.C. port and marine supplies.

57 History of the T.C. in the ETO, Vol. III, Chap. 13, p. 1.

During his three months' stay in North Africa, Colonel Ross had become convinced that the T.C. would have to become more active in handling its own supply stocks, and before he left that area he requested the OCT, to anticipate a probable ETO request by organizing T.C. depot companies.[58] Upon his return to London in March 1943, he promptly undertook to secure T.C. depot space and, later, approval for including T.C. depot personnel in the theater Troop List. He was successful in both efforts, but the OCT, ASF, experienced some difficulty and delay in obtaining and training the necessary personnel for depot units. On 26 June 1943, Colonel Ross was informed that two depot companies were ready to sail to his theater and two more were in the process of formation.[59] After further delay in securing theater priority for the early shipment of the units to U.K., Brig. General Ross received the first depot companies about 1 August 1943. Other depot units followed, and by 1 June six T.C. depot companies were operating in the U.K.

Meanwhile the Chief of Transportation in Washington had assumed extensive supply responsibilities, and so Brig. General Ross planned to expand his own supply activities accordingly. During October 1943 he established in his office a Supply Division which was responsible for the procurement, storage and issue of all items of transportation equipment authorized by the tables of equipment and special lists of equipment for T.C. units, and for all T.C. supplies and equipment required for operational projects.[60]

58 Personal letter to Maj.Gen. C.P. Gross from Col. F.S. Ross, 18 May 1943.

59 Personal letter to Col. F.S. Ross from Maj.Gen. C.P. Gross 2[illegible] June 1943.

60 History of the T.C. in the ETO, Vol. III, Chap. XI

The Supply Division arranged for the automatic issue of equipment to newly activated units provided the equipment had been preshipped. In cases where equipment arrived after the units, as was occasionally the case, they naturally had to wait for it. T.C. depots issued T.C. stocks of all types upon receipt of requisitions from the Supply Division.

At frequent intervals all OCOT operational divisions made estimates of the requirements of T.C. items that were not included in the organizational equipment of T.C. units. The Supply Division endeavored to fill these requirements from British sources by local procurement under the provisions of reciprocal aid. If supplies were not available in the U.K., the Supply Division submitted requisitions to the NYPE. It normally took 90 days from the time a requisition was submitted to the U.S. before items could be delivered in the U.K., except when, as was true in a great many cases, the items were not available in the U.S. stockpiles. In such instances, that is where the material had to be manufactured, delivery might require five to nine months. Initially, Supply Division did not have the advantage of complete catalogs of T.C. items, standard nomenclature lists, technical manuals and authorized stock levels, because the T.C. was a new service and had not yet time to fully develop its supply system. Also, the Supply Division, OCOT had to estimate replacement and mortality factors without the assistance of logistical data which the other technical services had developed from many years of experience.[61]

By the fall of 1943, advance copies of proposed supply catalogs reached the U.K. and somewhat relieved the situation. A final edition

[61] Ibid, p. 3.

of these catalogs was reached during March 1944, and since it changed many stock numbers, it necessitated revision of depot and stock numbers in the U.K. The extent of T.C. depot activities in the U.K. is reflected in the fact that in June 1944 the T.C. occupied 143,000 square feet of covered space, 4,157,000 square feet of open space and 136,000 square feet of shop space divided among 10 depots.

As D-Day approached and certain T.C. supply requirements had not been met, it became necessary to requisition by cable and request shipment by air of parts of marine engines for tugs, barge tankers and other types of craft.

About this time a stock control training team was set up with personnel obtained from the Supply Division. This personnel was given a special training course under the supervision of G-4, SOS, ETOUSA. The functions of the team included maintaining a record of all T.C. items as they were received in depots and dumps on the Continent, so that when the headquarters was moved to the Continent, there already would be a record available of all T.C. supplies and equipment that were on hand there.

During 1943 a forward echelon supply branch was established within the Supply Division, and given charge of procuring from T.C. stock piles such materials, equipment and supplies as would be necessary in the tial operations on the Continent from D-Day to D plus 90. This branch was also responsible for the establishing of supply depots on the Continent. It was decided that by D plus 90 six depots would be necessary to supply T.C. units. These depots also would contain Naval stores tempora ly, and T.C. depot companies ld staff them.

It is necessary to note that a considerable amount of T.C. equipment originally was placed in a joint stockpile with British equipment. This was particularly true for rail and marine equipment. Gradually, however, the Supply Division, OCCT, took over the stockpile items which were required for U.S. operations on the Continent. In carrying through work of this type, as well as performing its normal functions, the Supply Division lacked sufficient personnel to perform its mission adequately. Until the end of March 1944 the Supply Division had only nine officers and one warrant officer, plus two officers who were assigned to the stock control training team.

One other matter which handicapped efficient handling of T.C. supplies was that many items of equipment were not standardized, due to the fact that no one manufacturer could produce the equipment in sufficient quantity to supply all of the T.C. requirements. For example, floating cranes and marine engines of many makes were shipped to the U.S. This fact prevented the Supply Division from submitting advance requisitions for spare parts, since it was never certain of the make or model it would receive.

British assistance in providing items for the T.C. stockpiles was considerable, and while separate statistics for such items have not come to hand, by 30 June 1944 overall British reciprocal aid in goods and services amounted to $82,803,504.[62] This figure can be broken down to show that the T.C. received $62,517,163 in reciprocal aid from the British War Office, $19,690,000 from the Ministry of War Transport, $592,584 from the British Ministry of Food and $3,757 from the British Air Ministry.

62 Ibid, Chap. XIV, pp. 2-3. For an overall account of British aid to the American Bolero program, see Report of the General Board, USFET, Study #128, pp. 15ff.

VI. PREPARATIONS FOR THE AMPHIBIOUS ASSAULT

No phase of planning for the Allied campaign on the Continent was more important than the study devoted to the Normandy beach assault, for German defensive strategy and preparations placed the highest importance on preventing the Allies from gaining a foothold in western Europe.[1] By breaking the outer defense wall in what admittedly was one of the most difficult operations of modern warfare, namely an amphibious assault against strongly held enemy positions, the Allies would overcome the greatest single obstacle to the fulfillment of their main objective, that is the defeat of Nazi forces in the field.

Planning for the amphibious assault on Normandy was pushed after the Quebec Conference (August 1943) had approved the COSSAC Overlord plan. The U.S. V Corps, which had participated in the general planning since July 1943, was instructed by COSSAC during September to concentrate on planning for the cross-Channel assault. It should be observed that the V Corps was assigned to prepare for a beach landing that was to comprise the larger of the two American assault enterprises.

Planning in the British Isles entered a new phase with the arrival during October 1943 of the 1st U.S. Army Headquarters under the command of Lt. General O.N. Bradley.[2] The V Corps was then assigned to the First Army, as was the VII Corps, the organization which was scheduled to secure the second of the two American beachheads. By December 1943 representatives of the First Army were working closely with the British

1 Report by the Supreme Commander, op.cit., p. 27.

2 First U.S. Army, Report of Operations, 20 Oct. 1943-1 Aug. 1944, Book 1, p. 13.

21st Army Group on a joint U.S.-British plan for the initial stages of the European campaign. During this stage the First Army would operate under the command of 21st Army Group, over which General B.L. Montgomery was placed in command after General Eisenhower was appointed Supreme Allied Commander.

During January and February 1944 higher echelon planning for the amphibious assault phase of the campaign bore fruit in the publication of printed plans. General Eisenhower arrived in London and secured CCS approval for an assault over a broader area than that planned by COSSAC. Parenthetically, it may be stated that it would be difficult to overestimate the benefit to U.S. Army morale that resulted from General Eisenhower's arrival and his vigorous activities.[3] Coincident with his arrival, the First U.S. Army established a separate Planning Group to work with representatives of the 21st Army Group in the British method of planning, that is by committee discussion.[4] By the end of January the Initial Joint Plan was issued for Operation Neptune, which was the code name assigned the assault phase of the European campaign.

This plan laid down the missions of the Allied Armies, Navies and Air Forces and clarified the hitherto uncertain mission of the Allied assault force by stating that it was to secure a lodgement area for further operations by a general holding action to the south and capture of Cherbourg on the north before the 14 days, later extended to 20 days,

3 History of the T.C. in the ETO, Vol. II, p. 2.

4 First U.S. Army, Report of Operations, op.cit., Book 1, pp. 25-26. Both the U.S. Army and the Navy raised some objections to the committee-type work, but it continued to be employed during the planning period.

of the Neptune period had ended.[5] The First Army Report of Operations has pointed out that in some particulars U.S. Army procedure, particularly in regard to supply, differed widely from British Army procedure and the plan perforce had included adjustments so that overall instructions to be issued later would take full cognizance of these differences.

The First Army then worked on the plans for its own part in the assault, and by 10 February had secured a Joint Agreement with the Commander of Naval Task Force 122, the Western Naval Task Force, on projected amphibious operations. This was followed in the same month by the issue of the First Army plan for Operation Neptune. The plan showed that the First Army assault would consist of simultaneous attacks by U.S. V and VII Corps on the Normandy beaches extending from Varreville to Calvados. A follow-up force would land partly on D-Day and partly on D plus 1. The plan estimated that the lift capacity for two assault forces, a follow-up force and buildup forces through D plus 14 would be as follows:[6]

	Day	Vehicles	Personnel
Force O (V Corps)	D	3,241	29,714
Force U (VII Corps)	D	3,569	30,452
Force B (Follow-up)	D, D + 1	4,431	26,492
Preloaded Buildup	D + 1	2,821	21,238
Preloaded Buildup	D + 2	3,242	22,234
Buildup	D + 2 through D + 14	49,362	369,061
Total Available Lift		70,666	499,191

While the buildup period was under First Army control, that is for the first 14 days, the above estimate proved fairly accurate when compared with the actual lift of troops, especially for the assault period. The First Army also was responsible for the coordination of the logisti-

5 Ibid, p. 26.

6 Ibid, Annexes 1 and 2, p. 142.

cal wor of all U.S. forces for the period D to D plus 14.[7] An Advance Section, Communications Zone, under the First U.S. Army Group, was responsible for the coordination for the period D plus 15 to D plus 41, and Forward Echelon, Comzone, was responsible to the subsequent period. The organization of Advance Section and Forward Echelon will be considered shortly.

The main difficulties which the First Army encountered in coordinating logistical work for which it was responsible, lay in arriving at satisfactory tonnage allocations.[8] There were limitations to the capacities of the beaches for receiving supplies, and the Navy would not permit any ship or craft carrying troops and vehicles to carry bulk supplies. Furthermore, when during the latter part of April 1944, the VII Corps loading plans were submitted for approval to the assault force commander, the Navy found that LSTs were to be assigned more troops than the Navy would permit. Consequently, the Naval Task Force Commander ordered that the number be restricted to 400 instead of 600 troops, plus vehicles, on each LST. This order forced revision of troop loading plans. Also, the supply ship tonnage originally allocated was insufficient to meet minimum requirements of the forces at the rate of buildup made possible by the allotment of troop and vehicle carrying craft. An adjustment also was made in this instance to achieve, according to the First Army Report of Operations, a balance "between the tonnage requirements of the forces, the capacities of the beaches and the shipping allocations."[9]

7 Ibid, Book 1, p. 31.
8 Ibid, pp. 31-32.
9 Ibid, p. 32.

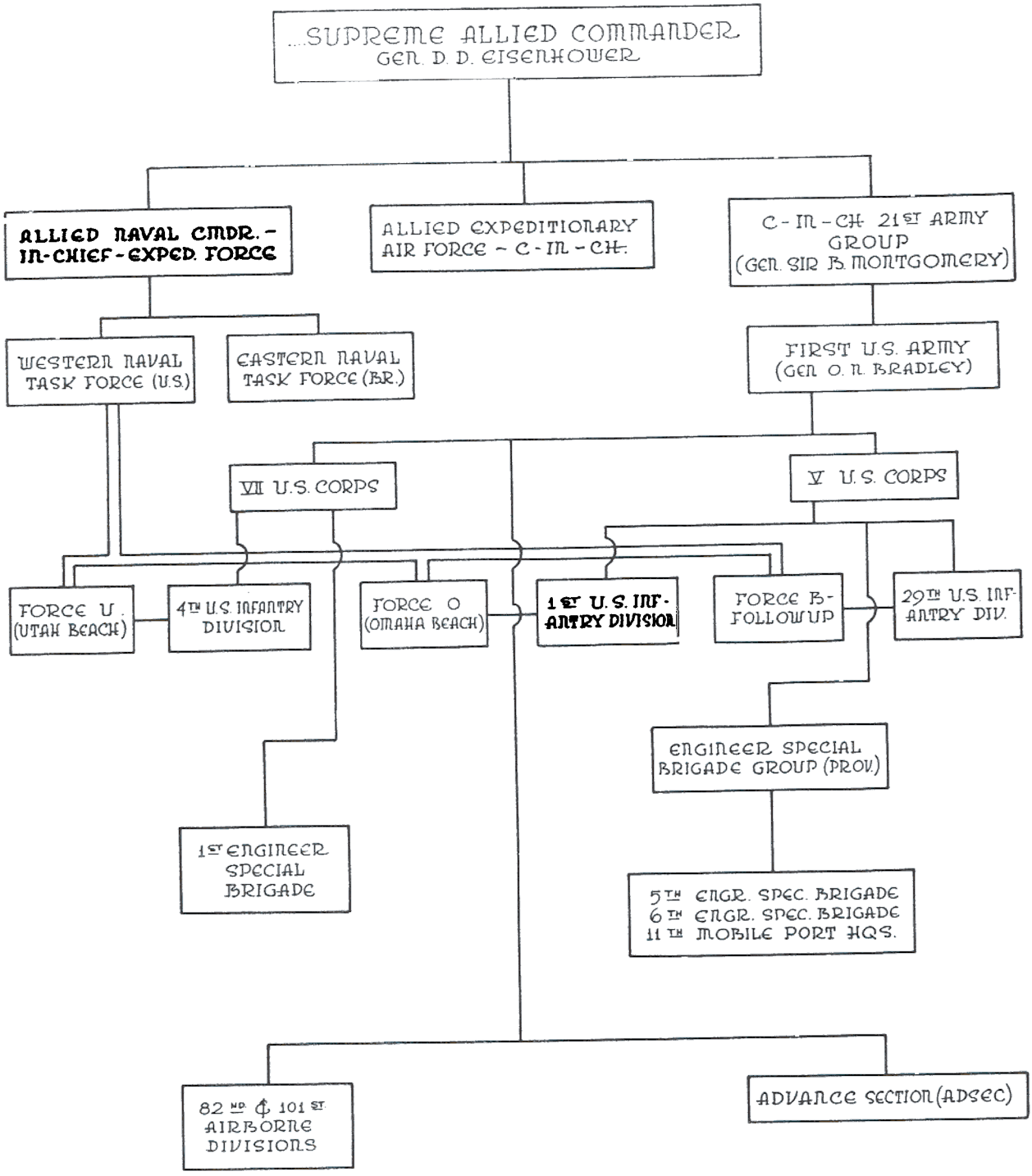
Meanwhile the VII and V Corps had been drawing detailed plans for their part of Operation Neptune. The V Corps under Major General L.T. Gerow, with one combined team of the 29th and 1st Infantry Divisions, was to assault the area near St. Laurent sur Mer, on what was termed Omaha Beach. It was to be convoyed to and landed on the beach by Naval Task Force C, under the command of Rear Admiral Hall.[10] Some of the assault waves would include elements of the Provisional Engineer Special Brigade Group, the unit which was to provide logistical support for V Corps ashore.

The VII Corps under Maj. General J.L. Collins, with the 4th Infantry Division making the assault by sea and the 82nd Airborne Division and the 101st Airborne Division landing in the rear of the German coastal defenses, was to establish a beachhead in the neighborhood of Varreville, on what was to be called Utah Beach. This beach was on the southern portion of the east coast of the Cotentin Peninsula, and was located nearer Cherbourg than was Omaha Beach. The VII Corps was to be escorted at sea by the Naval Task Force U under the command of Rear Admiral D.P. Moon and supported logistically by the 1st Engineer Special Brigade.

The foregoing somewhat confusing list of echelons of commands and units can be more readily visualized by reference to the accompanying chart, which shows the organization under General Eisenhower's command on D-Day. The chart does not, of course, show the American headquarters, ETOUSA, nor the Service of Supply, ETOUSA. General Eisenhower served not only as Supreme Allied Commander, but also as theater commander,

10 Amphibious Operations: Invasion of Northern France, Western Task Force, June 1944, Chap. 1, p. 2.

Chart Showing Allied Organization .... for The Invasion of Normandy



that is Commanding General, ETOUSA. In an effort to provide a greater degree of integration of staff than he had found in January 1944, eral Eisenhower appointed Lt. General Lee, the head of the theater Service of Supply, Deputy Theater Commander. It was the task of these theater organizations to administer and provide services for all U.S. ter troops. Requisitions for supplies which First Army, the Air Forces or Advance Section, Comzone, drew up for Continental operations, were placed with SOS, ETOUSA, which was charged with filling the requisitions, moving supplies to the ports and loading them on ships and craft.

Engineer Special Brigades

As previously mentioned, an Engineer Special Brigade Group (Provisional) was formed to assist V Corps on Omaha Beach. The size of the assault and follow-up force, and the fact that the American artificial harbor was to be established along this beach, required more than the customary Engineer Special Brigade for beach logistical operations. Consequently, two Engineer Special Brigades, the 5th and the 6th, were assigned to work at Omaha Beach, and in order to coordinate their efforts a new type of unit, the Brigade Group, was projected.[11] The Group was formed during February 1944 under the command of Brig. General Hoge, and by 15 May it had gradually built up a headquarters staff of 55 officers.[12] It had proved very difficult to procure enough trained staff officers to meet operational requirements, since the officers available were from different branches of the service, with varied backgrounds,

[11] Operation Report Neptune, Omaha Beach, 26 Feb.-26 June 1944, prepared by Historical Section, ETOUSA, 30 Sept. 1944, p. 7.

[12] This did not include the Headquarters and Headquarters Company.

and most of them without amphibious training. The staff was procured, expanded and trained at the same time that the highly technical planning was carried on.

An unusual feature of general staff organization was provided when in addition to the customary four assistant chiefs of staff, a fifth section, that is a G-5 or Port section was added, to handle all marine phases of planning and operations.[13] By 30 March the Port section was assigned responsibility for all phases involving the movement of cargo, personnel and vehicles from offshore to the water's edge, or through a port. The G-3 section was delegated to handle all phases of the movement of troops, vehicles and supplies ashore. The special staff of the Group contained offices for many of the technical services, but the QMC and the T.C. were not among them.

For initial beach operations in support of Regimental Combat Teams, units of the Provisional Engineer Special Brigade Group were organized around an Engineer Combat Battalion into four Battalion Beach Groups. These Groups contained various attached units such as Q.M., Signal, Ordnance, Engineer and T.C. units. There also was a company of a Naval Beach Battalion attached to each Beach Group.

Parenthetically, it should be noted that the Navy also provided a port organization consisting of a Naval Officer in Charge, under whom were a Port Director, a Ferry Control Officer, a Salvage and Repair Officer, a Construction and Maintenance Officer and a Petrol, Oil and Lubrication (POL) Officer.[14] There was one such organization responsible

[13] The G-5 officer was Lt.Col. Carl Biehl, formerly attached to the 11th Port Headquarters.

[14] Amphibious Operations - The Invasion of Northern France - Report of the Western Task Force, June 1944, Chap. 5, p. 11.

to Assault Force Commander, and in addition, there was a Shuttle Control Officer, with the necessary assistants, to provide for the reception and sailing of convoys. This officer was under the command of the Western Naval Task Force.

As the projected task of the Provisional Group expanded, it became evident that the number of troops attached to it also would have to expand. Furthermore, it appeared appropriate to turn over to a port operating unit responsibility for operation of the artificial harbor, and the small ports of Isigny and Grandcamp, located adjacent to Omaha Beach. Consequently, on 19 April the 11th Mobile Port, then operating the Bristol Channel ports, was attached to the Group and assigned to the 6th Engineer Special Brigade.[15] To the 11th Port which was under the command of Colonel R.S. Whitcomb were attached four port battalions; five amphibious truck companies; 3 Q.M. service companies; 1 Ordnance MAM Company; 1 utility detachment; and other units, bringing the total number of troops to 8,600 officers and enlisted men.

The 11th Port was handicapped in preparing for its assignment by the brief period between the time of its selection and D-Day, the fact that the 6th Engineer Special Brigade never issued its own plan of operation, the difficulty in contacting and assembling for training the units upon which it would depend for operations (these units were scattered in various parts of Great Britain and District commanders were reluctant to release them from the necessary work they were performing) and the delay, until 3 June, in the completion of operational plans by Advance Section, Comzone.[16] Nevertheless, the personnel of the Port

15 Operation Report Neptune, op.cit., p. 12.

16 History of the T.C. in the ETO, Vol. IV, Section II, p. 1; and author's interview with Col. R.S. Whitcomb.

headquarters underwent rigorous physical training in Wales to fit themselves for strenuous duties that lay ahead, and they drew up plans for establishing an SOP appropriate to their assignment.

Organization of Advance Section, Comzone

Not to be overlooked among the many organizations formed to participate in early Continental operations was the Advance Section of Comzone, which initially was attached to the First Army. Later, it was to revert to Comzone control and serve as the advance base section headquarters for the U.S. forces invading from western Europe, following along behind the victorious U.S. Armies. This Section was formed provisionally on 7 February 1944, and obtained a permanent status on the following 24 April. Its duties differed from both the Forward Echelon, Comzone, and the T.C. Advance Echelon, for as indicated above, it served as the important base section organization calling forth supplies and personnel from rear areas to meet the needs of the Armies, and assisting in the evacuation of the wounded.

The Advance Echelon of the T.C. on the other hand, established under the supervision of Colonel D.W. Traub during September 1943, was formed chiefly to confer with higher echelons in the theater on transportation matters, and particularly to assist in planning T.C. responsibilities on the Continent.[17] The staff of the Advance Echelon was

17 History of the T.C. in the ETO, Vol. II, pp. 138ff. Apparently as part of his duties, Col. Traub served as a T.C. representative on the Joint Logistics Staff Committee, an organization established by October 1943 under the auspices of the SOS, ETOUSA. At a Committee meeting of 8 Oct. 1943, seven U.S. Naval officers, one WSA representative and nine U.S. Army officers were present. Later the size of the Committee was increased and Col. Traub was then admitted to membership. Quondam Minutes of the Meeting of the Joint Logistics Staff Committee.

built up only slowly, but by March 1944 it had become well organized along the lines of the theater OCOT. Meanwhile, Colonel Traub had spent most of his time collaborating with SHAEF, the 21st Army Group and the First U.S. Army. On the basis of this collaboration, appropriate staff sections of the Advance Echelon planned future T.C. work in the field of port, railway, highway, and movement control operations.

The Forward Echelon, Comzone, was organized to precede Headquarters, Comzone, to the Continent and, in particular, to take control of supply activities on the beaches from the Advance Section, Comzone, on D plus 41 (about 15 July), as Advance Section moved forward behind the First Army. Building up the staff of Forward Echelon, Comzone, required drawing personnel from active work with the various services during strenuous D-Day preparatory activities. All indications pointed to the necessity for this buildup, but because of the static combat conditions on the Continent prevailing in mid-July, followed shortly by a rapid advance after the breakthrough at St. Lo, the Forward Echelon, Comzone, was not required for its intended assignment, and it never functioned on the Continent.[18] Instead, the personnel of its staff were distributed to Advance Section, Normandy Base Section, or Comzone Headquarters.

To return to a discussion of Advance Section (ADSEC), shortly after its formation a Transportation section or branch was inaugurated with the arrival in London of three officers and two enlisted men from the 4th Port, and two officers and two enlisted men from the 3rd Group Regulating Station.[19] On 13 February Colonel William Koenig was appointed

18 Though this statement may be open to question as far as the entire Forward Echelon is concerned, it is true for the Transportation Section. See History of the T.C. in the ETO, Vol. IV, Section I, p. 1.

19 Ibid, Section V, p. 1.

Transportation Officer, ADSEC, only to be replaced on 18 March by Colonel G.W. Beeler. Meanwhile the staff was built up chiefly by obtaining additional personnel from the 3rd Group Regulating Station, the 10th Group Regulating Station, which arrived in the U.K. on 26 May, and replacement centers.[20] At the same time units were requisitioned for attachment to the Branch and planning proceeded for motor transport routes on the Cherbourg Peninsula and the operation of the 4th Port at Cherbourg. By 31 March 1944 reputedly there were nine divisions in the Transportation Branch, namely the Executive, Planning and Control, Administrative, Supply, Training, Movements, Highway, Rail and Marine Divisions and a Motor Transport Service. The continuance of a Motor Transport Service, in view of the fact that there was a Highway Division and by 31 March a Motor Transport Brigade in ADSEC, is subject to doubt. In any case, before leaving for the Continent the Transportation Branch, ADSEC, published SOPs for continental operations, assigned the units that had become attached to it, prepared phasing and priority lists and requisitioned supplies.

The activation of the Motor Transport Brigade occurred hurriedly during the first part of May 1944, less than a month before D-Day. On 1 May Colonel C.W. Richmond, in command of Depot G-25, was notified by Lt. General Lee of his selection to head such a unit.[21] Official organization of the Brigade began on 16 May, and because no other personnel were immediately available, Colonel Richmond was authorized to draw troops from his former depot staff. From this source and from personnel

20 History of the Transportation Section, Advance Section, Communications Zone, ETOUSA, from Activation to 30 Sept. 1944, p. 2.

21 History of the T.C. in the ETO, Vol. IV, Section III.

later drawn from the 10th Traffic Regulating Group, Colonel Richmond began to build up the Motor Transport Brigade organization to a table of organization calling for 43 officers and 169 enlisted men. Obviously, the unit was handicapped by a lack of time, for its organization and its functional procedure had to be worked out before D-Day. A special problem in organization and control arose because the Brigade was not recognized beyond the authority of Advance Section, Comzone, to command or administer T.C. units assigned to Advance Section. In other words, because Base Section and District commanders held control of most T.C. units that were assigned to operate within the Advance Section area of command on the Continent, the Motor Transport Brigade could not supervise their training while they were in the U.K.

Training and Practice Exercises

It has been remarked that the U.S. troops were required to participate in so many practice amphibious assault exercises, that as D-Day approached they were not only fully prepared to carry out their mission, but were relieved that "the real thing" had come at last. These exercises, in addition to the training provided individual units such as port battalions and movement control officers for specific tasks, proved a real boon to those officers who were administratively responsible for mounting the invasion force. An assault training center had been established at Ilfracombe, in Devonshire, in 1942, and was operated by Headquarters, ETOUSA, until late in 1943 when the First U.S. Army took control.[22] The training region was then expanded to include the Slapton Sands area, near Dartmouth.

22 First U.S. Army, Report of Operations, 20 Oct. 1943-1 Aug. 1944, p. 19.

The first practice amphibious exercise was held as the result of a directive issued by V Corps, 19 November 1943,[23] one month before a directive was issued to the Navy 11th Amphibious Force to arrange for the amphibious training of Naval forces and such Army divisions as were to be assigned by Headquarters, First Army.[24] The exercise was given the code name "Duck". The 19 November directive called for the movement under V Corps of the 29th Division, plus reinforcements (totalling 24,279 troops), by sea from Falmouth to seize the Slapton Sands area. In this region topographical conditions closely resembled those of the Normandy coast. The U.S. Navy, the Service of Supply and 9th Air Force, in addition to V Corps, were the principal participating agencies.[25]

The exercise was carried out during January 1944. A Transportation Corps representative coordinated the T.C. plan for the move, based on a tentative draft of a POM Short Sea Voyage, and the general operating procedure of the T.C. in the U.K. In accordance with planned Movement Tables, troops and equipment were moved by RTOs from camps (Concentration areas) to Road Convoy Regulating Posts (RCRPs) of Marshalling Areas, for planned craft loading by Embarkation Staff Officers (ESOs) on the hards at embarkation areas. With minor changes, mainly administrative, Exercise "Duck" was said to have proved that movement in accordance with the POM Short Sea Voyage, was highly successful for mounting future exercises and operations.[26]

The landing phase of the exercise was made as realistic as possible.

23 History of the T.C. in the ETO, Vol. III, Chap. I, p. 22.

24 Amphibious Operations, Invasion of Northern France, op.cit., Chap. 1, p. 19.

25 History of the T.C. in the ETO, Vol. III, Chap. I, p. 22.

26 Ibid, p. 23.

Planes of the 9th Air Force simulated support for the Naval operations, which consisted of manning the landing craft, convoying the entire force and providing supporting gunfire from vessels offshore. In discharging and landing cargo skid loads were employed. Skidloads were prepared by placing cargo upon a platform with wooden runners, and making it secure by lengthwise, girthwise and diagonal steel bands. The platforms could be "skidded" along the ground or conveniently placed in Dukws from which they were unloaded ashore by the use of a special transfer rig. The rigs were devices which could be set up in less than an hour, and operated by means of hand winches. Despite the care with which supplies were bound to skids, some breakage occurred during the practice exercise.

Among the helpful lessons learned from Exercise Duck was that three divisions could be mounted from the Plymouth-Portland-Falmouth-Dartmouth port areas, instead of one, as previously supposed;[27] that ramps should be designed to facilitate the loading of LSTs;[28] that a method of tracing freight shipments must be initiated; and that for motor convoy operations, it was important that the convoy commander make personal reconnaissance of his vehicles, that convoy information be disseminated early and completely, and that each unit concerned in a move should be contacted as early as possible.

A second practice exercise, termed "Fox", was staged with two divisions during March.[29] The principal purpose of this exercise again was to provide experience in marshalling, embarking and landing the 18,000 troops and 1,700 vehicles which made up or accompanied the force.[30] Dur-

27 Omaha Beachhead, op.cit., pp. 6-7.
28 History of the T.C. in ETO, Vol. III, Chap. I, p. 23.
29 Ibid, Vol. II, pp. 128ff.
30 Ibid, Vol. II, pp. 131ff.

the latter part of March a third exercise was staged for VII Corps. Cargo was loaded on two coasters according to prestowage plans furnished by the 13th Port and the theater OCOT. The coasters were discharged by personnel attached to the 1st Engineer Special Brigade, without the participation of port battalions. In both this and the preceding exercise, additional lessons were learned in movement, loading and discharge of personnel and cargo.

Mention also should be made of an embarkational exercise staged in the Belfast port area from 24 to 26 March, in which personnel and impedimenta were loaded aboard vessels only theoretically.[31] Personnel embarked aboard vessels by marching up one gangplank and then returning immediately to quayside by another gangplank. In like manner, after each vehicle had been held 30 minutes at the quayside for theoretical loading, it returned to the assembly point.

Finally, there were two full scale dress rehearsals, one each for V and VII Corps. The VII Corps, in conjunction with Naval Task Force U, held maneuvers in the Plymouth area during the latter part of April. Unfortunately, when one of the escorting destroyers was damaged in a collision, it was not able to prevent an attack on the convoy by a German E-boat, which sank two LSTs with some loss of life.[32] During the first week in May Naval Task Force O, with the troops of the V Corps staged a long and successful dress rehearsal, employing the program worked out for the Continental assault in all but the actual landing in Normandy.[33]

31 History of the T.C. in the ETO, Vol. III, Chap. I, pp. 25-26.
32 Report by the Supreme Commander, op.cit., p. 17.
33 Omaha Beachhead, op.cit., p. 7.

Mounting the Assault Force

The extreme complexity of last minute preparations affecting transportation in the Neptune operation almost defy description. Stepped up Allied Air Force bombing of German manufacturing centers, where such commodities as oil and gasoline were turned out, and strategic transportation centers, whose destruction would help to immobilize German forces and supplies,[34] was supplemented by clever deceptive Allied invasion preparations which immobilized the German Fifteenth Army in the Pas de Calais area, not only during the initial period of the Allied amphibious assault but long afterward as well.[35] Intelligence reports on German coastal defenses and the strength of the German forces in western Europe had to be kept up to date. General Eisenhower has reported that on 3 June there were 36 German infantry and six panzer divisions located in the Channel coastal area opposite England, from Holland to Lorient, France. In the immediate area of the projected Normandy assault, the Germans had concentrated one panzer and nine infantry divisions.

To counter these forces the U.S. had built up by 6 June a force of 1,533,000 troops that supplemented the British and Canadian strength.[36] These troops and the materiel to support them had arrived in the U.K. in ever increasing quantities as D-Day approached, creating port, rail and highway traffic problems which were complicated by the simultaneous movement of forces for mounting the invasion. Further reference to this subject will be found in a later paragraph, but reference to incoming

34 Impact, U.S. Tactical Air Power in Europe, prepared by Office of Ass't Chief of Air Staff, Intelligence, Vol. III, #5, May 1945, pp. 16ff.

35 Report by the Supreme Commander, op.cit., pp. 17-18.

36 The Winning of the War in Europe and the Pacific, op.cit., p. 30.

cargo calls to mind the fact that the U.S. forces had stockpiled 2,500,000 tons of material for the invasion alone.

The Allied Air Forces were required to take extra precautions to see that the German Lufftwaffe did not interfere with Allied mounting operations. The Allied Navies provided constant guard at sea for incoming convoys, while they assembled landing craft and put the final touches to Naval Task Force preparations. Weather forecasts were closely studied to determine the most feasible day and hour for launching the amphibious attack. It is well known that after all loading of troops and equipment had occurred for a 5 June assault, the weather forced General Eisenhower to make a last minute decision in favor of 6 June. Meanwhile, vessels that already had put to sea were called back and troops awaited impatiently in cramped vessel quarters.

Work continued on various construction, conversion or assembly tasks, and perhaps none was more urgent than that on the various vessels to be used in establishing the two artificial harbors, or Mulberries. Labor disputes had caused delay in the construction of the large cement caissons or "phoenixes" which were to form a part of the Mulberry breakwater.[37] The necessary tug allocations were in doubt until the last moment. One favorable factor in connection with the Mulberries was that their construction and subsequent erection on the Normandy beaches was kept so secret that not until mid-July did the Germans realize their existence and purpose.

Preparations for laying underwater pipelines for carrying precious POL products across the Channel to Normandy also had to be brought to

37 Report by the Supreme Commander, op.cit., p. 12 and passim.

successful completion. These were to be joined with pipelines which the Corps of Engineers laid on the ground behind advancing U.S. Army combat troops. Furthermore training of late troop arrivals continued. As already cited, on D minus 8 the last group of troops who were assigned to operate the all important Dukw reached England.[38] They were almost completely untrained in operation of the amphibious craft, and yet they had to be "whipped into shape" by D-Day.

Various Allied or U.S. units, especially those which had been activated during the second quarter of 1944, had to complete their organization and finish their plans before the deadline date. Among those units, and not previously mentioned, were BUCO, COTUG and TURCO, all concerned with timely movement of ships, craft, personnel and cargo.

Of course, the Movement Control organizations of both the British and American forces, in addition to the Ministry of War Transport, were primarily concerned with the control of movement of troops and their equipment from the assembly and concentration areas to embarkation areas.[39] These organizations also were concerned with the movement of cargo from depots and intransit depots designated to support Continental operations. But to insure compliance with the phasing tables which had been drawn up to regulate the flow of troops to the Continent, the build-up control agency known as BUCO was created for joint British-U.S. operations.[40] The American branch of this organization, known as BUCO-

38 "Three Men in a Dukw", by M. Silverman, Saturday Evening Post, 20 Apr. 1946.

39 Historical Critique of the United Kingdom Overlord Movements, prepared by U.K. Base Section Transportation Office, 1 Nov. 1945.

40 Report of the General Board, USFET, Transportation Section, Study #122, op.cit., p. 22.

EST was responsible for U.S. troop movements to the Continent.

For the control of vessels to be used in the invasion, and their expeditious turnaround, a joint U.S.-British traffic control agency was created, and designated Turnaround Control (TURCO). It was staffed with both British and U.S. Naval personnel, and passed information relative to vessel return movement from the Continent to the T.C., in order that the mobile port organizations could be prepared to reload the vessels promptly.

And finally, under the British Admiralty a joint organization was set up to control the use and operation of all towing craft to be employed. Primarily, these towing craft were tugs, hence the title of the organization, CCTUG, but it should be noted that in an effort to supplement the service given by tugs, barges later were towed to the Continent behind Liberty ships.

Other types of special towing included not only the various vessels used to form the Mulberries, but also what was called the "Davis-type" raft.[41] These rafts were constructed on a pattern similar to log rafts used in American west coast timber areas. Essentially, they consisted of a huge bundle of poles bound together by cables so as to withstand the heaviest seas and yet be easily dismantled. The rafts were assembled prior to D-Day and anchored in spots where they would not interfere with the normal flow of ship traffic. After D-Day small tugs operated by harbor craft companies and the Army Transport Corps towed the rafts across the Channel and deposited them on the beaches. There they were disassembled and their contents employed in various construc-

41 History of the T.C. in the ETO, Vol. III, Chap. VII, p. 7.

tion projects. Somewhat similar in method of operation was the pre-D-Day loading of 16 barges with ammunition and POL. These barges were ready several weeks before D-Day, and were stored in "spots of safety" to await H-Hour. Early in the assault period they were towed to Normandy and left on the beaches, where, as events proved, their cargo was urgently required, and therefore was of great benefit to the combat forces.

The most intricate and difficult task in preparing for D-Day, however, was the outloading of the assault and follow-up forces and the buildup forces. The size of these forces and the amount of their equipment and supplies, coupled with the necessity for paying very careful attention to proper timing in their movement, and the necessity for simultaneously handling the continued influx of personnel and cargo from the U.S. made this one of the great mounting operations of the war.

The scope and character of incoming passenger movements is indicated by the fact that 385,295 U.S. troops arrived between 1 April and 28 June 1944.[42] Moving these troops from the ports included the handling of 500,000 pieces of baggage. During May when 7,000 troops arrived aboard the USS WAKEFIELD, they raised the total for that month to 132,000, although only 125,000 troops could be accommodated on British railroads during a month. In this case it therefore was necessary to provide for the distribution of the 7,000 troops wholly by motor transport. This was the largest personnel move that motor transportation had handled in the U.K. The operation included the dispatch of personnel in 11 separate convoys during 20 and 21 May; required the employment of

42 Ibid, Vol. III, Chap. III, pp. 1-2.

400 trucks; involved delivery to 15 different destinations; and included the movement of one convoy a total of 260 miles.

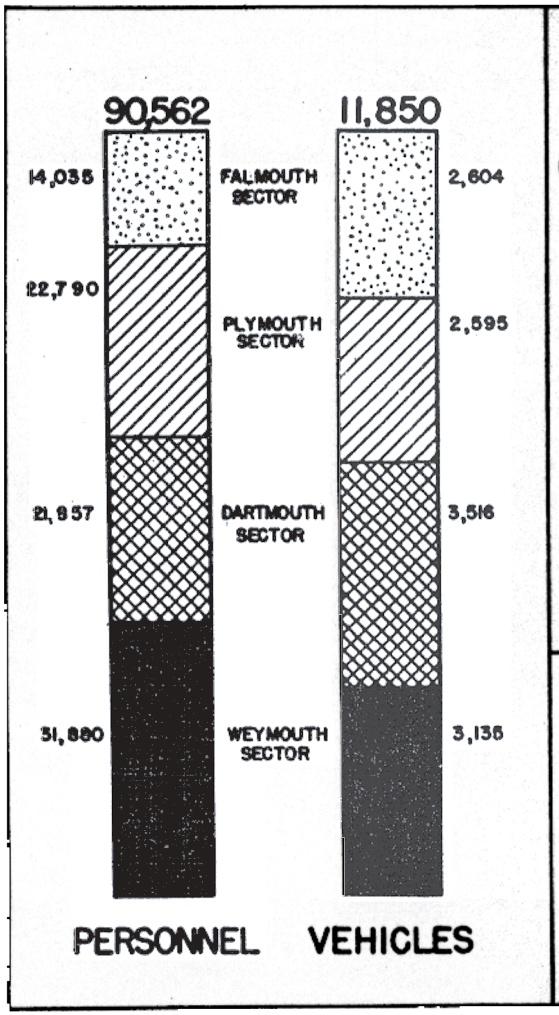
Handling cargo from incoming vessels was complicated by the virtual closing of the Bristol Channel and south coast ports, and a lack of coasters to transship cargo, since coasters were required in the mounting of the invasion. Transportation difficulties were increased by the fact that most of the incoming cargo was destined for depots in southern England.[43]

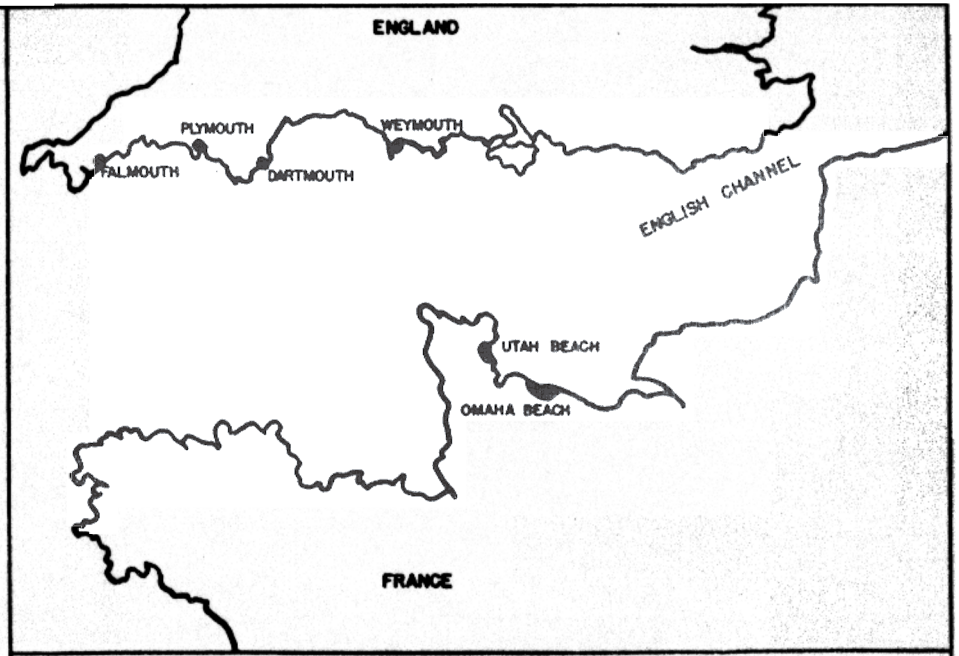
Added to these factors was the large number of cargo ship arrivals, resulting from the previous delay in dispatching Bolero supplies. During May an additional 38 vessels reached U.K. waters, over and above the 120 vessels that the Ministry of War Transport had allocated to the U.S. Army for the month.[44] Berths could not be found for the extra 38 vessels, and so they remained at anchorage, while debate proceeded as to what should be done with their cargo. The Transportation Corps historical report for the period relates that the situation became so acute that both the Prime Minister of Great Britain and President Roosevelt had to be consulted in the matter. What their respective positions were is not stated, but reference is made to a compromise which provided for dumping behind the port areas 40 percent of the cargo of the 38 vessels. Such action was believed certain to result in the virtual loss of the

43 Brig. General Ross also complained about what he termed the "gingerbread" shipped to the U.K. from the U.S. He believed that 5,000 tons of peanuts and 50,000 radio sets, battery operated, might well have been left in the U.S. in favor of more essential cargo. In reply to this statement, Maj. General Gross agreed that there had been too much "gingerbread", but added that the T.C. had shipped what the theater commander requested. Personal letter to Maj.Gen. C.P. Gross from Brig.Gen. F.S. Ross, 6 June 1944; and reply 19 June 1944.

44 History of the T.C. in the ETO, Vol. III, Chap. III, pp. 7-8.

LOADING OF U. S. ASSAULT FORCES FOR NORMANDY INVASION





SHIPS AND CRAFT FOR ASSAULT

LCT - LANDING CRAFT, TANK	330	XAPA - 535 FOOTER	3
LST - LANDING SHIP, TANK	106	LCH - LANDING CRAFT, HEADQUARTERS	3
LCI - LANDING CRAFT, INFANTRY	89	LSH - LANDING SHIP, HEADQUARTERS	1
LSI - LANDING SHIP, INFANTRY	9	LSD - LANDING SHIP, DOCK	1
APA - 535 FOOTER	7		

TOTAL - 549

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STATISTICS BRANCH T.C.
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cargo so dumped, due to exposure to the weather. However, the Freight Branch, Movements Division, OCOT, went to work on the problem and by careful calculation and determined efforts to obtain the necessary transportation, secured the delivery of the entire cargo lot to U.K. depots

Meanwhile, mounting operations were in full swing. It had been decided that the assault and follow-up forces would embark at Falmouth, Plymouth, Dartmouth and Weymouth.[45] Ten assault vessels (APAs and XAPAs) and 539 landing craft were assigned for loading 90,562 troops and 11,850 vehicles. The types of landing craft and the number of troops and vehicles loaded in each port area are shown in the accompanying chart. The immediate buildup forces were to load in the Bristol Channel area, and forces to move later, as well as supplies consigned to Continental forces, were to be loaded at Southampton, Plymouth and other southern ports. Southampton was designated for loading vehicles on motor transport vessels, and also special supplies urgently called for from the Continent. Blood, medical supplies and other high priority freight were to be carried under a Red Ball Express system, which should not be confused with the Red Ball truck route established on the Continent during August.[46] A Green Light system also was set up for transporting ammunition or engineer construction materials across the Channel in special coasters for discharge over the beaches.

Since it was necessary to move 144,000 tons of supplies for pre-

45 Report of the General Board, USFET, Study #122, Chart. A naval report, however, states that the assembly ports for Force U alone were: Belfast; Plymouth; Dartmouth; Tor Bay; Weymouth Bay; Poole; Salcombe; Torquay; Portland; Brixham; and Yarmouth. Amphibious Operations, Invasion of Northern France, Western Task Force, op.cit., Chap. 1, pp. 10ff.

46 History of the T.C. in the ETO, Vol. III, Chap. IV, p. 3.

loading vessels prior to D-Day, in addition to the supplies necessary for mounting the assault forces, traffic on the British railroads was particularly heavy. Troops might move from any of the 1,200 concentration areas in the U.K., to any of the 100 marshalling areas,[47] to await the call forward to embarkation areas. In the Western Base Section movement to the marshalling areas, of which there were 26, began as early as 17 April.[48] Some troops were moved out to the Southern Base Section and some troops were moved into the Western Base Section during the mounting period. Additional administrative responsibilities were placed on Movement Control personnel in the latter section during the period, and yet the number of Movement Control personnel declined.

In the Southern Base Section the heaviest movement of personnel and freight occurred during the mounting period. On D-Day the 1 Transportation Office of that Base Section was operating more than 100 District Transportation Offices and RTO installations. There were elements of 11 Traffic Regulating Groups in operation, but the tremendous movement of troops and supplies to the marshalling areas made it necessary to seek additional help, especially since there was a shortage of available officer personnel.[49] Other branches of the service and other Sections managed to send an additional 50 officers and additional enlisted personnel to help out.

The Road Traffic Branch of the Southern Base Section became extremely busy during May and June. It became the coordinating office between other Base Sections and the Districts. Certain towns such as

47 Omaha Beachhead, op.cit., p. 2.

History of the T.C. in the ETO, Vol. III Chap. , p. 1.

Ibid, Chap. VI, p. 2.

Gloucester, Cheltenham, Cirencester and Oxford which served as funnels through which traffic from or to other Base Sections flowed, became critical points. Special traffic posts were established at these points, and because traffic control was largely decentralized to the District Offices, conferences between the Regional and the District Officers worked out procedures and problems. The Regional Office allotted the District Offices block timing for their moves. Daily meetings were held with the British to provide coordination of movements and settle any problems that arose. Regional and District Offices worked on a 24-hour schedule.

With D minus two the first movements into marshalling areas started.[50] The biggest unforeseen problem was the proper allocation of units. Many of the locations given by the Embarkation Commander were found to be false. Consequently, a special section was set up in the Regional Office to handle the relocation of these units and pass the information to the Districts. Lack of time in which to notify units was another problem. This was solved by having RTOs alert units from the forecasts which were already issued, so that when the actual tables were distributed, units would already have been located and would be waiting their final instructions.

From 4 June to 13 June 29,000 vehicles and 152,000 troops were moved to marshalling areas in the Southern Base Section, and thereafter an average of 3,000 vehicles and 15,000 troops moved to marshalling areas daily. The orderly and timely movement of these troops and vehicles required Transportation Corps personnel to coordinate military

[50] Ibid, p. 6.

police motorcyclists, Ordnance patrols to stand ready to repair any vehicle that might be damaged or break down while in convoy, Medical services in the event of casualties, Signal Corps messengers in the event of communications disruption, and practically every other phase of Army activity.[51]

Statistics have not been made available for the movement of supplies in the Southern Base Section during the weeks preceding D-Day, but for the entire month of June the following operational movements are recorded for only the Oxford District of that Base Section:[52]

Special Freight Trains	250
Ordinary Rail Shipments (No. of Trains)	112
Ordinary Motor Shipments (" " ")	187
Red Ball Express Motor Shipments (")	54
Green Light Motor and Rail Shipments (")	9
TOTAL TONNAGE	47,287 - DWT

For the same month, the following types of Overlord personnel movements by rail are listed:

Personnel	from	District	in	Movement Overlord	26,724
"	"	"	"	Routine Movements	6,515
"	into	"	"	Operational Movements	18,740
"	"	"	"	Routine Movements	16,025
"	on Hospital Trains				15,528
	Prisoners of War				1,009
	Total				84,541

During June the Oxford District (Southern Base Section) Transportation headquarters also arranged for the movement of 866 motor vehicle convoys, involving 28,491 vehicles and handling 69,112 personnel.

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51 Ibid, p. 2.

52 Ibid, p. 10. For similar movements in the Salisbury District, see ibid, pp. 11ff.